HUMAN RESOURCES STUDY NUMBER 7

The Measurement of Attitudes Toward Disabled Persons

Harold E. Yuker
J. R. Block
Janet H. Younng

Human Resources Center
Albertson, New York 11507

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1966

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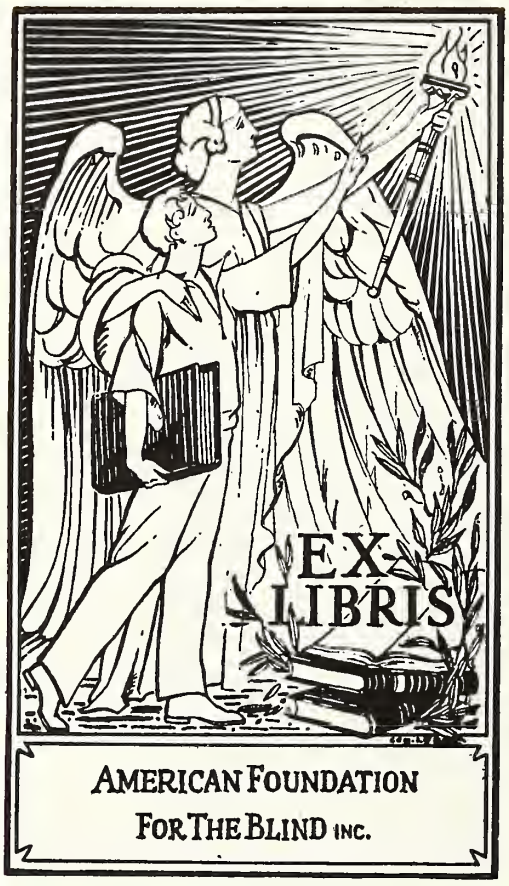
Project RD-834



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This investigation was supported, in part, by a research grant, number RD-834, from the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Washington, D. C., 20201.

Human Resources Research and Training Institute

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Enclosed is a copy of The Measurement of Attitudes Toward Disabled Persons, Human Resources Study #7, by Yuker, Block, and Younng. This monograph is the result of eight years of research conducted at Human Resources Center and elsewhere dealing with the three forms of the Attitudes Toward Disabled Persons scale.

This monograph supersedes all previous publications dealing with the ATDP scales and has incorporated all the data and information found in the other publications.

We wish to express our gratitude to the many persons whose research results have been incorporated in the monograph and whose assistance and cooperation have made a significant contribution to this report.

We will continue working with the ATDP scale and wish to encourage others who are working in the area of attitudes toward the disabled to continue communicating with us about the results of their research.

Any comment or criticism of the monograph would be greatly appreciated.

FOREWORD

Today, it is recognized in the field of rehabilitation that attitude and motivation are significant factors in the adjustment of the physically disabled. A disabled person who is highly motivated and has appropriate attitudes will behave very differently from one who is not motivated and has negative attitudes. This distinction was recognized early by the research staff at Human Resources Center and led to the intensive series of studies that have culminated in this monograph.

Since we believe that these factors are crucial, it is hoped that the results reported in this study will be valuable to everyone working with the physically disabled. By providing insight into the dynamics of the psychosocial aspects of disability, these findings may help those in rehabilitiation with their task. Also, by providing this information, it will help us to convert physical disabilites into mere physical characteristics and not "handicaps."

Henry Viscardi, Jr.
President

11/20/67 letter Request

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ACKNOWLEDGEMENTS

The present monograph is the result of significant contributions by so many people that it is impossible to acknowledge our debt to them individually. All members of the staff at Human Resources and at Abilities during the past eight years have contributed to the research reported herein. Many persons in the fields of rehabilitation and the psychological aspects of physical disability have provided important advice and meaningful criticisms. All the individuals whose research studies are reported herein have been most cooperative. In view of this long list of persons who have been most helpful, we would like to thank them collectively rather than attempt to single out individuals. Without the help of all of these people, this monograph would not have been possible.

ERRATUM

Pages 96 and 97 have been transposed in the numbering and binding of the monograph. Thus, page 97 should follow page 95 and page 96 should follow 97, according to the present numbering.

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Chapter 1

INTRODUCTION

This monograph was designed as a comprehensive report on recent research pertaining to the measurement of attitudes toward disabled persons. The report stems to a large extent from a series of studies carried out over the past eight years at Human Resources. This material has been supplemented, however, with a comprehensive review of the literature and citation of the results of studies done all over the country with a variety of instruments. Thus, while the research at Human Resources Center will occupy a central role in the monograph, it will be supplemented by reports from other investigators and by discussions of other studies.

To provide a context for the monograph, we shall start out with a brief discussion of Human Resources Center and its activities.

Human Resources Center, in Albertson, Long Island, New York, is composed of three coordinated units: Abilities, Inc., Human Resources Research and Training Institute, and Human Resources School. Abilities, Inc. is a non-profit, demonstration, industrial and clerical work center which specializes in electronic assembly, packaging, and data processing. Its work force of over 400 men and women consists only of those disabled and mentally retarded individuals who, by all normal standards, are generally considered unemployable. They are paid prevailing wages and receive standard employee benefits. Abilities, with its industrial, banking, and data processing work environment, serves as a research and training laboratory in which the workers can be evaluated under actual working conditions. Besides serving as a demonstration project for the employment and training of the disabled and the retarded, Abilities, Inc., in conjunction with the Human Resources Research and Training Institute, conducts research in machine adaptation, machine design control, and power tool modification. The story of Abilities has been told in Give Us the Tools by Henry Viscardi, Jr. (1959), the president and founder of Abilities, and in a number of articles appearing in the mass media and professional journals (Time Magazine, 1961; Archer, 1964; Block & Campbell, 1963; MacKaye, 1955; Pessar, Viscardi, & Krobath, 1962; Thompson, 1960; and Yuker, Campbell, & Block, 1960).

Human Resources Research and Training Institute is a non-profit organization which conducts research in medicine, bio-chemistry, orthotics and prosthetics, medical electronics and telemetry, bio-engineering, physiology, and social-psychology relating to the diagnosis, treatment and rehabilitation of the disabled and mentally retarded. The Institute also conducts evaluation and training programs and research related to the education, vocational training, rehabilitation, and employment of the disabled and the retarded.

Human Resources School is a non-profit, citizen directed educational institution chartered by the Board of Regents of the State of New York offering a full academic curriculum for previously homebound disabled children from the pre-school through senior high school level. The school was established in 1963 and approximately 100 students enrolled in the fall 1966 term. The school, in conjunction with the institute, conducts research in curriculum development, modifications of teaching equipment, physical plant design for disabled students and research in teaching

techniques. The school also serves as a training center for teachers of the disabled at the pre-school, elementary and secondary level.

Much of the research at the Center is related to investigations of the employment of disabled persons. The research program attempts to answer such questions as: (a) What are the effects of employment on disabled workers? (b) How do disabled workers compare with non-disabled ones? (c) How do Abilities' employees compare with disabled workers in other settings (e.g., conventional industry, sheltered workshops)? (d) What factors are the most important determinants of the employability of disabled persons? (e) What variables are most significantly related to the "adjustment" of disabled workers?

In evaluating the employability of disabled persons one must consider two major sets of factors. The first, and, perhaps, most obvious consideration relates to aspects of the person's physical disability, including the type of disability, severity of disability, the age at which the person became disabled, etc. The second set of factors might be classified as psychological, including the individual's motivation, his self-concept, and his attitudes.

In a monograph published by Human Resources (Yuker, Block, & Campbell, 1962) a number of demographic, physical, and psychological characteristics of the employees of Abilities, Inc. were correlated with measures of their industrial performance. This study indicated that such factors as type of disability, extent of disability, and age at onset of disability were unrelated to measures of work performance. On the other hand, executives at Abilities, Inc. who are themselves disabled, reported that an employee's attitudes toward himself and his disability and his level of motivation seemed to be important determinants of performance on the job. As a result, the staff at Human Resources set out to find psychometric devices designed to measure these variables. A search of the literature suggested that few such measures were available, and that these few were not suitable. Therefore, the authors decided to attempt to develop one.

It was decided that a measure of generalized attitudes toward the disabled might provide an indirect means for assessing the motivation and self-attitudes of a disabled individual. These beliefs were based on a review of the literature in which a number of references were found to be most useful including: Barker, Wright, Meyerson, and Gonick, 1953; Bauman, 1950; Dembo, Ladieu-Leviton, and Wright, 1952: Fitting, 1954; Meyerson, 1948. In setting up the measure the staff decided that they would attempt to devise an instrument that could be used with both disabled and non-disabled persons. It was hoped that a generalized measure of attitudes toward disabled persons could be fruitfully used in research with a number of different populations.

The fundamental assumption underlying the development of the Attitude Toward Disabled Persons scale was that disabled people may be viewed by both the disabled and non-disabled as either different from physically normal persons or as essentially the same. On this assumption, the present authors collected a series of items each describing disabled persons as either "different from," or "similar to" physically normal persons. Some of the items referred to the characteristics disabled people have, and others referred to how they should be treated. Twenty items were selected for inclusion in the original form of the Attitude Toward Disabled Persons scale (Form O). The scale was presented in a Likert format and was administered to several thousand subjects. The initial results suggested that the scale was reasonably reliable for one of its type and length, and that it correlated with a number of meaningful criterion measures (Yuker, Block, & Campbell, 1960).

Although the staff was encouraged by these results it was believed that the reliability, and perhaps the validity of the scale could be improved by increasing its length. The authors decided that if items were added to the original scale, its reliability and validity might change in unpredictable ways and previous data collected with the scale would no longer be relevant. Further, the availability of alternate forms of the scale would have obvious advantages. As a consequence, two new forms of the scale, Forms A and B, were developed in 1962, and these new forms have been used in subsequent research. Our data indicate that these new forms are in certain respects

different from the original. In the present monograph we shall provide a comprehensive discussion of all three forms of the ATDP and the research that has been done with them.

In preparing the monograph, the authors have attempted to utilize the standards set forth by the American Psychological Association for psychological test manuals (American Psychological Association, 1966). The procedures used in the development of all three forms, their administration, scoring, and interpretation, as well as their reliability and validity, will be discussed. All research reported on through mid-1966 will be summarized. Finally, an attempt will be made to evaluate the ATDP, indicate its usefulness, and specify its potential.

The data presented in this paper come from a wide variety of sources. Many of the studies have been conducted at Human Resources by the authors of the present paper; some have been done at Hofstra University under their supervision. Many studies have been conducted by other investigators and have been reported in the rehabilitation literature. Some studies are in the form of unpublished Master's Theses and Ph.D. Dissertations. Some of the results reported in this monograph come from correspondence with individuals who have used this scale but who have not published their findings. We have attempted to maintain contact with all persons using the ATDP and have requested that they submit their findings to Human Resources.[1] To our knowledge most persons using this scale have done so. The data to be presented report findings on administrations of this scale to approximately 15,000 persons. The large number of studies has made it possible to verify or disconfirm many hypotheses relating to attitudes toward disabled persons.

In the chapters to follow we shall discuss in detail many of the aspects involved in the measurement of the attitudes toward disabled persons. Chapter 2 provides a review of the literature tracing the development of instruments to measure such attitudes. Chapter 3 describes the reliability of the three forms of the ATDP and such factors as social desirability, response set, and criticisms and modifications of the ATDP. Instructions for administration, scoring, and interpretation are also provided in Chapter 3. Chapter 4 reviews the demographic correlates of attitudes toward disabled persons including age, sex, nationality and race, and marital status. In Chapter 5 the personality correlates of attitudes toward disabled persons are covered. Motivation, interests, self-concept, and intelligence are among the correlates reviewed. Chapters 6 and 7 deal with attitudinal, and experiential and behavioral correlates, respectively.

Chapters 4 through 7 include many studies which provide validating data. Thus, these chapters cite both the ATDP and other attitude measures. In some cases, the ATDP has been correlated with these other measures and in other cases both the ATDP and the other measures have been correlated with independent criteria. Each of these chapters contains a summary and conclusions drawn from the research reported and the last chapter of the monograph presents the major implications derived from research with the ATDP.

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[1]Human Resources Center deeply appreciates the cooperation of all persons and institutions who have used the ATDP. The list is so extensive that we have included it as a separate appendix (C) to this report. We hope that we may count on continued cooperation to permit full evaluation of this instrument.

Chapter 2

MEASUREMENT OF ATTITUDES TOWARD DISABLED PERSONS: A REVIEW OF THE LITERATURE

The subject of attitudes toward disability has received wide attention from psychologists, physicians and rehabilitation personnel over the past 30 years. The techniques used to measure these attitudes have been extremely varied. Early articles tended to be either theoretical discussions of attitudes based on subjective personal experiences, or collections of the considered experiences of persons associated with the disabled. These subjective evaluations often provided hypotheses for later evaluative studies. They also provided statements of opinions about disability which could be used as questionnaire items in the development of objective measures for evaluating attitudes. Studies using objective measures have made use of a wide variety of techniques; some were carefully planned and methodologically sound while others were inadequate in one or more respects.

The specific technique used by an investigator seeking an objective evaluation of attitudes toward disability is usually determined by the purpose of his study. In most cases, the main purpose of a study is either to survey attitudes or to investigate specific hypotheses about attitudes toward disability. It is rare to find a study in which a primary goal is the development of an objective instrument for measuring attitudes. Consequently, investigators in this field have tended to develop simple and untested instruments for eliciting attitudes. There are, however, a number of examples where carefully planned and methodologically sound attitude measures were developed as a preliminary step in a more comprehensive study.

Generally speaking, attitude measures are needed for two types of studies. The first type of investigation is concerned with the prevalence of specific types of attitudes toward disability. An instrument developed for this type of study need not be a scorable measure since each attitude item can be analyzed separately in terms of the frequency of agreement or disagreement responses. These data can be compared with frequencies of response to other types of attitude items. Further, the frequency of agreement between different groups of subjects may be compared in studies of stereotypical attitudes. This type of study demands little sophisticated methodology in the construction of an instrument beyond careful phrasing of the items.

The second type of investigation is concerned with the relationship between attitudes toward disability and other variables. Such a study is best conducted with an objectively scorable measure providing a continuum of acceptance-rejection or positive-negative affect. This type of measure requires greater attention to methodological detail in order to produce a reliable and valid instrument.

Many of the instruments used in the past could hardly be considered sophisticated from a psychometric point of view. Frequently, no evidence was presented for the reliability or validity of either individual items or total test scores. Consequently, many of these instruments have limited utility and studies using them should be interpreted with caution.

In addition to the distinction between scorability and non-scorability, instruments differ in whether they attempt to measure attitudes toward a specific disability or disabilities, or physical handicap in general. Instruments oriented toward disability in general rather than toward a specific disability are a relatively recent development.

The range of formats used has been from simple unstructured interview schedules or questionnaires to Likert scales, from non-projective social distance scales, adjective check-lists, Q-sorts, and sociometric choice devices to sentence-completion and picture-story projectives.

This chapter will review most of the measures of attitudes toward physical disability developed from 1930 through 1965. The discussion will include measures of attitudes which a non-disabled person maintains about disabled persons, and attitudes which a disabled person maintains about himself and his own disability.

Studies of the attitudes of non-disabled persons toward the disabled include investigations of prejudice, acceptance-rejection, and individualized versus stereotypical attitudes. In studies of the attitudes of disabled persons toward the disability of others or disability in general it is often assumed that these are the expression of self-attitudes, through the mechanism of projection. Thus, measures of self-concept, self-esteem, self-image, and personality adjustment are often included in this section when any of the items on these personality measures are phrased in terms of attitudes toward disability or disabled persons.

Attitudes of Non-Disabled Persons

Based on studies in the literature, investigators have apparently devoted greater effort to developing measures of the attitudes of non-disabled persons than they have to developing measures of attitudes toward disability on the part of disabled persons. Because of the large number of studies, this section of the literature review will be organized by type of measure into four general categories. These are non-scored instruments, simple scored instruments, attitude scales, and other scorable techniques. In this chapter we shall discuss only the structural characteristics of instruments; their correlates will be described in the appropriate sections of Chapters 4, 5, 6, and 7.

Non-scored instruments. The simplest method for tapping attitudes is the unstructured questionnaire or interview schedule. In such measures S is asked direct questions about his attitudes toward disability or disabled persons and responds freely. This method was used as early as 1933 by Koehler in a study of the attitudes of university instructors toward blind students. It is still used in many attitude surveys, particularly those of employer attitudes toward disabled workers (Jennings, 1951; Barton, Colardarci & Carlson, 1954; Reeder, 1958; Garrett, 1964). Usually the data from unstructured questionnaires or schedules are treated only in terms of frequencies of types of response for each item. This was done in a study by Horowitz and Rees (1962) which investigated types of attitudes and information held by adults and children about deaf people and deafness. These studies yield a pattern of specific types of attitudes toward disability, but do not give psychometric measures of over-all attitudes toward disability. Thus, Jennings (1951), for example, interviewed 20 employers in the New York City area, asking questions about such factors as the perceived need for special provisions for the disabled on the job; the awareness of the physical capabilities of the disabled; the degree of acceptance of the disabled as a working member of a team, etc. On the basis of these interviews, she reported that employer attitudes reflected a lack of confidence in the physical ability of disabled persons; a tendency toward exaggerated sympathy, with a consequent inability to accept the handicapped as one who could, and should, be treated as a member of the so-called normal staff; and an erroneous concept of the handicapped person's rate of absenteeism.

Some investigators have used structured questionnaires and interview schedules or a combination of structured and open-end items rather than the simple open-end schedule. Baxt, David, Jaffe, and Wang (1959) used such a questionnaire in their study of employers' preferences in hiring disabled persons, as discussed in Chapter 6. The structured questionnaire may have the same format as a scorable rating scale, but the investigators have not utilized scaling techniques or scoring methods. Instead, frequencies in each category of response for each separate attitude item are compared for different groups of Ss as in the open-end questionnaires.

Retest reliability on structured but non-scorable questionnaires can be calculated from percentage of shifts of response by 0, 1, 2, 3, 4, etc. categories, depending on the range of response categories. This analysis gives an indication of the stability of each item. This type of reliability check was used by Schletzer, Davis, England, and Lofquist (Industrial Relations Center, 1961) with a non-scorable, 6-point (strongly agree to strongly disagree) rating scale to survey types of attitudes toward hiring disabled workers. The purpose of the Industrial Relations Center study was to compare specific attitudes toward the disabled. It can be assumed, therefore, that investigative purpose, rather than inadequate or unsophisticated methodology, dictated the preference for percentages of response categories to specific attitude items instead of the development of a total score measure of overall attitude toward disabled workers. Total score measures are psychometrically more sophisticated, but a complex factor analysis would be necessary to study the relationships of specific attitude items to each other. Thus, comparing frequencies of response to different attitude items is adequate for simple surveys of specific attitudes. However, Schletzer et al. seem to be the only users of non-scorable structured questionnaires who used this type of stability check to increase the reliability of this type of instrument.

The simplest of the non-scorable structured schedules consists of items with 2-point response categories of "yes-no," "true-false," or "agree-disagree." Baskin and Herman (1951) attempted to measure attitudes of both rehabilitation and non-rehabilitation students toward persons with cerebral palsy. They used 12 statements about cerebral palsy such as: "It is embarrassing to be seen with a cerebral palsy person in public," and "Many cerebral palsy's have higher intelligence than normal people." Subjects were simply required to answer "yes" and "no" to each item. These investigators have made no attempt to scale the items but instead treated each separately. The findings of this study are discussed in Chapter 4 under Sex and in Chapter 7 under Contact. Similarly, Simmons (1949) developed a "True-False" questionnaire consisting of a series of statements of "Opinions about Blindness" such as, "A blind person's sense of touch and hearing automatically become better than those of a sighted persons," and "Blindness is often God's punishment for sin." They studied the relationship between attitudes toward blindness and the variables of age, level of education, and contact. Their findings will be discussed in Chapters 4 and 7. Gowman (1957) used the same technique in a study of the relationship between socio-economic status and attitudes toward the blind, and Rusalem (1965) used it in a study of the relationship between attitudes and the "degree of contact" with the deaf-blind. Their findings are also included in Chapters 4 and 7, respectively.

In contrast to the two category scales described above, Strong (1931) used three response categories (liking, disliking, and indifferent) in a study of comparative attitudes toward different groups of persons (see Chapter 6). Strong, who was the first to study comparative attitudes toward different disabilities and toward other groups, used disability types such as "cripples," "blind people," and "deaf mutes" and other groups such as Negroes, Conservatives, "very old people" and "athletic men." Mussen and Barker (1944) used five categories of response ranging from the extremes of each trait they investigated through the average. For example, the trait "Disposition" could be rated as Lighthearted, Generally good humored, Average-Cheerful, Tendency to be less cheerful than average, or Usually seems depressed. In their study, designed to determine which personality characteristics were most often identified with "cripples," they used 24 personality character traits such as conscientiousness, kindness, self-reliance, mental alertness, religiousness, unselfishness, social adaptability, and self-confidence.

Ray conducted a study (1946) in which he used a non-scorable pictorial projective technique. As reported by Barker, Wright, Meyerson, and Gonick (1953), Ray had high school students place six photographs of college boys in rank order according to several behavior and personality characteristics. One picture, presented to half of the subjects, depicted a college student sitting in a wheelchair; in the presentation of this picture to the other half of the subjects, the wheelchair was blocked out. A ranking technique was also used by Schaefer (1930). Schaefer had his subjects rank ten personality traits in the order of those most characteristic to those least characteristic of blind persons. Schaefer was the first to investigate attitudes toward a specific disability group.

However, his method of forced ranking of personality traits was soon replaced by personality checklists and scaling techniques. The findings of Mussen and Barker, Ray, and Schaefer on personality characteristics attributed to disabled persons are found in the last section of Chapter 5.

Ranking procedures have also been used to elicit preferences among professionals or employers for working with various types of exceptional persons such as the gifted, the hearing disabled, the emotionally disturbed, the mentally retarded, the speech disabled, and the physically disabled (Kvaraceus, 1956; Gowman, 1957; Murphy, Dickstein, & Dripps, 1960; Warren & Turner, 1963; Appell, Williams, & Fishell, 1963; Rickard, Triandis, & Patterson, 1963). Others have used ranking scales to elicit differences in attitude toward various types of disability (Richardson, Goodman, Hastorf, & Dornbusch, 1961; Barsch, 1964). Nikoloff (1962) devised a checklist for use with school principals to indicate preferences in types of disabled persons considered employable as teachers. Bertin (1959) devised a short structured questionnaire to compare the attitudes of the blind and sighted with regard to choosing the worst vs. the most preferable sensory loss - blindness, deafness, lack of smell, lack of taste, lack of touch sensitivity. This method accomplished essentially the same purpose as the procedures mentioned above which rank disability types. The findings relating to differential attitudes toward various disability types will be summarized in Chapter 6.

Another technique which has been used is the adjective or personality checklist used by Rusalem (1950, 1965). In the first study, a checklist of 20 physical, 14 sociological, and 25 psychological traits was used. Ss were asked to check three traits in each category which they felt were most characteristic of the blind and to doublecheck the most important. This forced selection of traits was abandoned in Rusalem's second study. A 20-item personality trait checklist was then used in which S was permitted to check as many adjectives as he believed applied to the deaf-blind. This was combined with a 19-item, agree-disagree rating scale of statements about the dual handicap of deafness-blindness, and with a 10-item "degree of contact" questionnaire. His findings on the effects of contact on attitudes are discussed in Chapter 7. Rusalem concluded from these two studies that there are definite patterns of characteristics which the nondisabled tend to see as hallmarks of blindness, i.e., stereotypes. Mussen and Barker (1944), Ray (1946), and Schaefer (1930) also found personality characteristics which formed stereotypical patterns attributed to the disabled. These findings on personality stereotypes will be discussed in Chapter 5.

A method often used with children for assessing attitudes toward disabled children is the sociometric choice technique. Force (1956) studied the social status of disabled children in elementary school using what he refers to as a "near-sociometric instrument," in which children were asked to choose other students as friends, playmates, and workmates. His findings indicated that the physically disabled child was not as well accepted as the normal child in the classroom setting. Freeman and Sonnega (1956) and Soldwedel and Terrill (1957) also used this method to test hypotheses about children's social acceptance of speech disabled or physically disabled schoolmates. Szuhay (1961) also found sociometric methods most suitable with children. His measure will be discussed under scorable techniques, however, since he devised a scoring procedure for sociometric choices which would provide a measure of an individual's attitude toward the disabled.

Simple scored scales. Some investigators have devised measures of attitudes which resemble Thurstone or Likert attitude scales in format but which were not developed in strict accordance with the methodology associated with those techniques. In general, these simple scales were intended for specific investigative purposes and directed toward specific rather than general attitudes. Generally, acquisition of reliability and validity data either was not attempted, or such data as were acquired proved to be inadequate for broad application of the scale as a measure of attitudes.

Steingisser (1954) developed a 100-item, 3-point (agree, disagree, neutral) rating scale to provide a scorable measure of positive-negative attitude toward blindness. Statements

about blind persons were selected from those on which there was at least 75 percent inter-judge agreement as to whether the statement was favorable or unfavorable toward blindness. No other statistical development or analysis was attempted by Steingisser. She investigated the relationship of self-concept and acceptance of the blind; these findings are discussed in Chapter 5.

Bateman (1962) developed a 50-item, 3-point (yes, unsure, no) rating scale for sighted children to rate activities which blind children would be able to perform (no reliability or validity data reported). Total test scores and percentages of responses in each category were related to the degree of contact with the blind (see Chapter 7 for findings) and comparisons were made between urban vs. rural groups (see Chapter 4). Bateman's scale is the only rating scale the present authors have found which was devised for use with children. Most investigators have preferred sociometric choice or projective methods for studying children's attitudes.

Jensen and Kogan (1962) used a 5-point rating scale to measure the tendency of parents to overestimate the future capacity of their cerebral palsied children in achieving certain skills. The basis for comparison was staff ratings of a child's future skill potential. Though this scale was scorable, the criterion of staff ratings was viewed by Barclay and Vaught (1964) as too variable and subjective for use as an adequate predictor of future potential. They attempted to improve rater reliability by using objective measures of each child's intellectual and social development as a basis for staff ratings, rather than subjective staff evaluations. They were able to obtain an inter-rater reliability coefficient of +. 92.

Horowitz, Rees, and Horowitz (1965) developed a scale of 88 item statements about deaf, divided into four categories: 1) Treatment of the deaf, 2) Training of the deaf, 3) Personal characteristics, and 4) Achievement characteristics. The items were scaled on a 90 millimeter line ranging from "disagree completely" to "agree completely." The scoring of these responses was not based on a positive-negative continuum but on a continuum from Unrealistic to Realistic attitudes. This scoring criterion yields a scale scoring which is only partially consistent with scoring on the basis of negative-positive attitudes or acceptance-rejection. No reliability data are reported.

Dent (1961) developed a 10-item, 8-point scale designed to measure the subject's attitudes toward the job adjustment abilities of the blind in relation to specific job requirements. They report a reliability coefficient of +. 68.

Attitude scales. The development of attitude scaling techniques in the 1920's and 1930's by Bogardus, Thurstone, and Likert made possible the development of psychometrically sophisticated measures of overall attitudes which could be standardized for use in a variety of studies. The first and simplest attitude scale was the Bogardus Social Distance Scale first published in 1925. In 1927 and 1929, Thurstone described the method of paired comparisons and the method of equal appearing intervals for scaling and scoring attitude items. This was followed in the early 1930's by the Likert technique of summated ratings (Likert, 1932). In the past 20 years, complex and specialized statistical techniques for attitude measurement have been published by Guttman, Lazarsfeld, Edwards, and others. The present discussion of the relatively more sophisticated measures of attitude toward disability will follow this historical development.

Modifications of the Bogardus Social Distance Scale to measure the degree of social acceptance or rejection of disabled persons have been used by Meyerson (1948), Whiteman and Lukoff (1962a), Siller (1963) and Siller and Chipman (1965). Gilmore (1961) used a Social Distance Scale to measure attitudes directed toward the specific disability of esophageal speech.

Some studies using Likert scales have been oriented toward specific groups of disabled persons rather than toward physical disability in general. For example, a number of investigators have developed progressively more sophisticated Likert-type scales of attitudes toward blind persons. Cowen, Underberg, and Verrillo (1958) selected items from Steingisser's (1954) simple

scored scale discussed earlier, and some from Fitting (1954). The items were submitted to judges who used a discrimination method similar to Steingisser's but which required 100 percent agreement. Items were selected for inclusion in the final scale which had tetrachoric correlation coefficients with the total test score ranging from +.44 to +.75. The resulting Attitudes to Blindness scale was a 30-item scale using four levels of response ranging from "strongly agree" to "strongly disagree." The split-half reliability was +.91.

Lukoff and Whiteman (1959 & 1961) and Whiteman and Lukoff (1960a & b, 1962a & b, 1964) conducted the most elaborate test development to date with their Attitudes Toward Blindness Scale (A-B Scale). Some of the items were taken from Cowen's et al. (1958) scale and others from Gowman's (1957) non-scorable agree-disagree questionnaire. In the developmental form, (Lukoff & Whiteman, 1959; and Whiteman & Lukoff, 1960a) four- and five-point Likert-type items were combined with sentence completion items; with comparisons between blindness and other disabilities; with estimates of blind persons having certain attributes; and with semantic differential items. The main body of the A-B scale consisted of Likert items however. Items were classified into seven indices of attitudes toward blindness: Conceptions of Blindness, Emotional Attributes of Blind Persons, Community Integration Index, Mystical Qualities of the Blind, Independence of Blind Persons, Pity-Sympathy, and Interaction with Blind Persons, plus items relating to Contact with Blindness and Information about Blindness. The scale was given to a sample of 235 college students. Item and factor analyses were used to select items for each index and to re-evaluate and reorganize the indices. Of 36 inter-factor correlations, only nine were positively intercorrelated which led Lukoff & Whiteman to conclude that though the factors were not completely independent further analysis could produce distinct sub-scale factors.

In another study, the revised A-B Scale was given to a sample of persons living in middle and low income housing projects in New York City (Whiteman & Lukoff, 1960b & 1962b). Cluster analysis reduced the indices to four final clusters of attitudes toward blindness: Evaluation of Blindness, Protective-Interaction Index, Emotional Traits, and Positive Stereotype Index. Apparently, scores were summed for each of the indices separately, and not combined into a total attitude score. The A-B scale was further tested and developed on a high school sample (Whiteman & Lukoff, 1962a & b) and on a sample of 500 blind persons (Lukoff & Whiteman, 1961). The results with these two samples supported the above factors.

Lukoff and Whiteman hypothesized that response to blindness is too complex or multidimensional for a single scale purporting to tap a single dimension of attitude toward blindness. The intercorrelations on the four factor scales which first emerged from the cluster analysis ranged from -.04 to +.23, satisfying the hypothesis that they were measuring separate factors of attitudes toward blindness. The odd-even reliability coefficients for the first four factor scales ranged from +.66 to +.71 (Whiteman & Lukoff, 1962a). The intercorrelations and reliability coefficients for the final four clusters listed above are not given. They believe that their factoring and clustering results warrant the measurement of at least four dimensions of response toward the disabled. However, the Conception of Blindness (also labeled Evaluation of Blindness) index was found to most closely approximate a general factor (Lukoff & Whiteman, 1961).

After development of the A-B Scale, Whiteman and Lukoff used it to investigate a number of variables such as the relationship of the different attitude factors to sex, age, level of education (see Chapter 4 for findings), education and blindness (see Chapter 7), and ethnic tolerance (Whiteman & Lukoff, 1962a, & Lukoff and Whiteman, 1963). Their findings on ethnic tolerance are found in Chapter 6.

It was not until the late 1950's that rating scales were developed with reference to general, non-specific physical disability. Lukoff and Whiteman (1959) reported on a modification of the A-B Scale called the Physically Handicapped (P-H) Scale. This scale was identical to the A-B Scale, previously described, except that the word "physical handicap" was substituted in each of the items for the words "blind" or "blindness." Reliability data have apparently not been

reported. The P-H Scale was used in a study of differential attitudes toward blindness and physical handicap, blind persons and physically handicapped persons (Whiteman & Lukoff, 1965) as reported in Chapter 6.

The ATDP was first reported at the 1959 American Psychological Association meetings and published in 1960. At about the same time, Roeher (1959) independently developed a 22-item, 5-point Likert scale of attitudes toward the physically disabled, similar to the ATDP. At the time of development, neither author was aware of the other's activities. Roeher's attitude scale was combined with an Information about Disability Scale and an autobiographical blank to gain information about contact with and knowledge of disability. This Likert scale was standardized on two pilot groups: the first group consisting of 73 persons seeking employment as counselors at a camp for crippled children and the second group consisting of 35 members of a Catholic church club to balance the predominance of Protestants in the first group. The internal consistency reliability coefficient of the final scale was +.84 with a sample of 35. However, the consistency of the discriminatory power of the individual items was further demonstrated by the fact that there was no change in the rank ordering of the mean item values between any of the three research groups which utilized over 300 Ss. Roeher's findings, using this scale, are discussed in Chapter 7 under Contact.

In 1961, Szuhay developed the Adult Attitude Toward the Physically Disabled Scale (AATPDS) to measure the attitudes of a group of mothers toward the physically disabled. The mothers' attitudes were compared with the attitudes of their children as measured by a sociometric choice test described in a following section. Part one of the test used 10 items from Granofsky's (1955) projective picture and sentence completion measure of women's attitudes toward disabled men. Szuhay converted Granofsky's projective items into scale items by supplying four choices of response for each incomplete sentence. Judges' ratings were used to select scale values for responses using Thurstone scaling methods. The second part of the test contained 10 items concerning behavioral responses to given situations involving the disabled. The same type of 4-choice scaled response was used on this section. The intercorrelation between the Sentence Completion and Situation Behavior portions of the AATDPS was +.70 for Form A, and +.73 for Form B. Szuhay concludes that the two portions are complimentary, and measure somewhat different levels of attitudes toward the physically disabled. The two 20-item forms were developed on a sample of 50 women. Szuhay obtained an inter-form reliability coefficient of +.88. The AATPDS was validated by correlation with the ATDP as reported in Chapter 6. Szuhay's findings are found in Chapter 4 under the Sex variable and in Chapter 6 under Prejudice and Authoritarianism.

Auvenshine (1962) developed a 150-item, 5-point rating scale; the Attitudes Toward Severely Disabled College Students Scale. Items were scaled using Edwards' Scale Discrimination Technique (Edwards, 1957b), which combines Thurstone scale values and a Likert-type analysis to select items which significantly correlate with the total test score. Test-retest reliability was +.85. Knittel (1963) adapted Auvenshine's scale for use with Junior and Senior High School students. He referred to his instrument as the Attitude Toward Severely Disabled Students scale. Auvenshine's scale was correlated with age, sex, grade level and division of study and Knittel's modification was correlated with grade level, I.Q., degree of contact, and sex. These findings are reported in the appropriate sections of Chapters 4-7.

All of these Likert-type scales are in some ways similar to the ATDP. However, none has been used as extensively as the ATDP in research by as many different investigators.

Other scorable techniques. Other scaling techniques have been modified for use as measures of attitudes toward disability. The Osgood, Suci and Tannenbaum Semantic Differential rating scale (1957) was used by Nunnally (1961) and later by Barker (1964) and Blanton & Nunnally (1964) to measure attitudes toward a number of disability groups and physical disorders. The groups and disorders compared were "deaf people," "blind people," (Blanton & Nunnally), and alcoholism, brain tumor, congenital blindness, leprosy, malaria, psychosis, terminal cancer,

and tuberculosis (Barker). Barker's study used data selected from Nunnally's 1961 study to investigate the degree of similarity of public attitudes toward the above conditions. An inverse correlational analysis revealed two distinct and contrasting factors in attitudes toward disability: an organic factor and a functional factor. The Blanton & Nunnally study used the SMD to investigate the differences in associational and cognitive processes between deaf and normal groups. Differences in attitudes toward self and toward disability were among the processes studied. These authors do not present reliability or validity data for their particular modifications of the SMD. Some of Barker's and Blanton's & Nunnally's findings on attitudes toward persons with different disabilities are discussed in Chapter 6. Lukoff and Whiteman (1959) used the semantic differential in part of the Attitudes Toward Blindness Scale to investigate imagery about blindness. Both a semantic differential and a Q-sort of attitude items on disability were used by Deutsch and Goldston (1961), but developmental data were not reported by the authors. Neither the SD nor the Q-sort has proven as effective or popular as the Likert-Thurstone rating scales in the measurement of attitudes described in this monograph.

Some specialized measures have been devised. For instance, Szuhay (1961), in a study of the relationship between attitudes of mothers and their children toward disabled children and Negroes, developed the Children's Picture Sociometric Attitude Scale (CPSAS). This instrument was used in conjunction with his scale, the AATPDS, (1961) previously discussed. This sociometric measure differs from others in that choices are not made of actual persons, and further, in that it attempts to provide an objective scorable measure of overall attitudes toward disabled children. Ten pictures of social situations with non-disabled children are to be completed by S by selecting one of five fill-in pictures: a child on crutches, a Negro, or one of three non-disabled white children. For each situation picture, S is asked to select a first choice, then a second choice and so on until all five pictures have been used. Total attitude score is derived for each S by summing the number of times the disabled child is first choice multiplied by one, the number of second choices times two, the number of third choices times three, the number of fourth choices times four, and the number of fifth choices times five. Situation card #10 is not used in the scoring so the score range is from 9 (favorable) to 45 (unfavorable). When they are used to reflect attitudes towards actual persons rather than as measures of overall attitudes, socio-metric-choice methods are not ordinarily expected to exhibit internal consistency over time because inter-group relationships change with time. Face validity is usually the only assumption claimed for the choices (Lindzey & Borgatta, 1954). Szuhay gives no information on the internal consistency or validity of the CPSAS as a scorable measure of general attitudes toward disabled or Negro peers but he apparently considers the sociometric method the most suitable for tapping such attitudes in young children. Administration and scoring procedures were carefully standardized through pre-testing which ensured a high degree of interpretive reliability.

Ashmore (1958) used paired-antonyms in a trait checklist. Subjects were asked to rate a speaker with a speech defect by selecting one of a pair of personality trait antonyms. Summation of positive and negative responses produced a total test score. No other developmental procedures were reported.

Siller (1963) developed a Feeling Check List (FCL) on which S uses a 7-point scale to rate how he would feel in the presence of a physically disabled person. The FCL measures something similar to Siller's Social Distance Scale (r=+.57). Revised forms of both the SDS and FCL were later developed (Siller & Chipman, 1965). The second form of the SDS was scaled by the method of successive intervals, but the FCL was not psychometrically scaled. No reliability or validity data were reported for either form, and they were considered experimental measures.

Siller and Chipman (1965) also devised two summary measures of general acceptance of the disabled. The first (GA-1) was based on interview and questionnaire data from which each S was rated on: 1) phobic attitudes toward the disabled, 2) ambivalent attitudes toward the disabled, and 3) reservations toward certain types of disabled persons or certain types of interaction with the disabled. The second (GA-2) was derived by combining scores on Siller's FCL, SDS, and

the ATDP-O, and dividing each by its standard deviation. The findings of Siller using the FCL, SDS and the GA- 1 & 2 are found throughout Chapters 6 and 7.

A unique measure assumed to reflect social distance was devised by Kramer (1965). This measure was based on Ames' studies of distance judgments and "transactional" theory. Ss were asked to make distance judgments of a number of pictures, some of which were of disabled persons. Resulting differences between distance settings for pictures of disabled and non-disabled persons were assumed to reflect feelings of social distance. In addition, the degree of variability in distance settings of the pictures of disabled persons as compared to the pictures of non-disabled persons was considered a measure of approach-avoidance conflict. No reliability or validity data for these measures were reported. Kramer's findings on the relationship of his measure to the ATDP are discussed in Chapter 6.

Some investigators of attitudes toward disability have used projective techniques in which open-end responses are scored. Two studies used sentence completion projectives for eliciting attitudes toward physical disability (Granofsky, 1955) or chronic illness (Ford, Liske & Ort, 1962). Granofsky (1955) also used pictorial projective techniques similar to the TAT in his study of the effect of contact in changing the attitudes of women toward disabled men (see Chapter 7). Individual items on the Sentence Completion Test and on the Picture Test were validated by correlation with an independently derived Behavior Rating Scale, evaluating the behavior of Ss when in contact with disabled persons. Reliability data were not attempted.

Pictorial projectives have also been used with children. Henri (1949) used an adaptation of a Temple-Amen projective in which a set of pictures of six "crippled" and six "non-crippled" children were to be completed with either a sad or a happy face. Henri compared the responses of "crippled" and "normal" children and found no significant differences between the two groups. Both groups tended to see crippled children as sadder than normal children. Moed, Wight, Feshback and Sandry (1963) developed the Children's Seashore House Picture Story Test to compare the attitudes of hospitalized disabled, formerly disabled, and non-disabled children toward disability. Moed et al. found differences between the three groups. The disabled children produced fewer responses indicating recognition of disability, sympathy, self-pity, and need for achievement. Former patients produced the most negative attitudes toward disability, one-third more than the normal children and four times more than the disabled children. Their findings on sex differences are reported in Chapter 4. No reliability or validity data are reported in the test manual (Sandry, 1962).

Epstein and Shontz (1961) attempted to combine the spontaneous open-end response usually employed in non-scored questionnaires with a total test score measure. The 19 items on their Attitude Toward Physical Disability test were designed to elicit a short essay response. Each item was related to one of the following areas of disability: curiosity, communication, help, expression of sympathy, dating, marriage, employment and career. Where possible, the responses were classified into approach or avoidance valences and a total score derived for each S. No reliability data are reported. The measure was correlated with the Secord-Jourard measure of Body Cathexis as reported in Chapter 5.

It is frequently the case with measures of the type described in this section, that while they appear to have face validity, empirical data relating to their reliability or other types of validity are severely limited. Further, few of these measures have been used in more than one study.

Attitudes of Disabled Persons

The development of measures of the attitudes of disabled persons toward disability has not been as extensive as the development of measures of the attitudes of non-disabled persons.

The attitudes of disabled persons either toward themselves or toward other disabled persons can be quite difficult to measure since they presumably deal with ego-involved attitudes with strong emotional components. Such attitudes are much more difficult to elicit.

Most measures of attitudes toward disability designed for use with disabled persons were intended as measures of personality adjustment or self-concept. In some cases, items relating to attitudes toward disability have been isolated as a scorable subscale of a personality or adjustment measure (Bauman, 1954). At the other extreme, Fitting's (1954) and Larkin's (1962) adjustment to blindness measures were composed almost entirely of attitude items specifically relating to blindness. Litman's Disability Self-Conception Scale (1961) was also composed mostly of items directed toward being disabled. In other cases, however, items reflecting attitudes toward disability in general or toward one's own disability were interspersed with items reflecting other aspects of personality or adjustment (Fishman, 1949; Berger, 1951; Braen & Weiner, 1965). All these measures of the attitudes of disabled persons are scorable with the exception of Gellert's (1961) Picture Story projective in which frequency of responses to categories of items were analyzed.

Many investigators concerned with the self-concept or adjustment of disabled persons used standard personality measures such as the MMPI or Bernreuter's Personality Inventory. These measures are particularly useful in studies comparing the adjustment of disabled and non-disabled persons. This review will only be concerned with measures of self-concept or adjustment which were specifically designed for the disabled. For a review of studies using standard personality measures with the disabled see Barker et al. (1953) and more recently Levine (1963). This section will be divided into three main categories of measures designed for use with the disabled: Self Inventories, Attitude Scales and Other Measures.

Self-inventories. The earliest attitude measure devised specifically for use with a disabled group appears to be a scorable self-inventory developed by Brunschwig (1936); The Personality Inventory for Deaf Children. This 67-item self-inventory yields scores on General Adjustment, Social Adjustment, School Adjustment and Home Adjustment, but does not measure attitude toward disability per se. This measure was well standardized; the General Adjustment score was deemed to be reliable and valid by Barker et al. (1953) although he does not report the correlational data. This early inventory has been used by a number of investigators (Pinter & Brunschwig, 1937; O'Connor & Simon, 1942).

In 1950, Bauman published a 185-item self-inventory for blind adults called the Emotional Factors Inventory (EFI), which is similar in many respects to the Minnesota Multiphasic Personality Inventory. Individual scores may be obtained for seven personality trait subscales: Sensitivity, Somatic Symptoms, Social Competency and Interest in Social Contacts, Paranoid Tendencies, Feelings of Inadequacy, Depression, Attitudes re Blindness, in addition to Validation Items. The intercorrelations among the sub-scales ranged from +.46 to +.67. Of particular interest to the present study is the Attitudes re Blindness subscale which contains some items that were adapted for use in the first version of the ATDP (e.g., "People should give me special consideration because of my handicap"). The wording was changed, however, since Bauman phrased the items in the first person singular, rather than the third person plural used for ATDP items. The 29-item Attitude re Blindness subscale has a reliability coefficient of +.85 and, in comparison with the other subscales, discriminated most significantly between blind Ss who were evaluated as adjusted and non-adjusted by rehabilitation workers.

Dishart (1959) demonstrated the usefulness of the EFI in a Psychological Profile for testing the blind for rehabilitation. Bauman (1964) used the EFI in a further validation and normative study. Bauman, Platt and Strauss (1963) adapted the EFI for use with adolescents. This 150-item adaptation called the Adolescent Emotional Factors Inventory used some items from the EFI with the addition of items specific to teenagers, and consists of 10 subscales of approximately 15 items each, including a validation scale and nine diagnostic scales. The intercorrelations of the

10 subscales were generally low, ranging from +.09 to +.59. The odd-even reliability coefficients for the nine diagnostic subscales ranged from +.63 for the Somatic Symptoms scale to +.84 for the Sensitivity scale. According to the authors, the AEFI proved to have "practical validity" in eight months of clinical use to point up problems and the need for counseling. The sum scores of the nine diagnostic scales were also correlated with teacher-advisor ratings and superintendent-principal ratings of overall adjustment and produced correlations of +.53 and +.68, respectively.

A 280-item checklist self-inventory for use with disabled adults and adolescents was developed by Wright and Remmers (1960). Known as the Purdue Handicapped Problems Inventory, the scale was designed to reflect the problem areas which S checks as stemming from his handicap, and to yield separate scores in the areas of vocational, social, family and personal problems. Internal consistency coefficients ranged from +.91 to +.95 for the four areas. No validity other than face validity is claimed for this measure, although the items are similar to items used on self-inventories of personality adjustment.

Attitude scales. Rating scales have been used less frequently to measure the self-attitudes of the disabled than to measure attitudes of the non-disabled toward the disabled. Most of the rating scales designed for use with the disabled were not developed according to strict Thurstone or Likert techniques and would be classified as simple scored scales resembling Thurstone or Likert formats.

The first simple subjectively phrased rating scale for measuring self-attitudes of a particular disability group was the Attitude Inventory (Cavan, Burgess, Havighurst & Goldhamer, 1949) a 56-item, 2-point scale to measure the favorable-unfavorable self-concept of older persons. Cavan's agree-disagree scale was found by Jeffers and Nichols (1961) useful in measuring the self-concept of older disabled persons. The original report on the Inventory (Cavan et al., 1949) presents reliability and validity data. However, this report was not available to the present authors.

A 13-item scale was developed by Larkin (1962) to measure the adjustment to blindness of blind adolescents. All items were related specifically to blindness. Although there was a 5-point response range from very positive to very negative, these response categories for each item were reduced to valences of 0 or 1 by an analysis of the responses of high and low scorers in an adolescent pilot group. Only 11 of the items were used in the total score. The resulting score range from 0 to 11 was presumed to reflect adjustment to blindness. Larkin's data on the variables of sex, age, age of onset of disability, and intelligence are reported in Chapters 4 and 5. In 1963, Wardell, Bahnson, and Caron devised a 47-item, 4-point rating scale to measure the "self esteem" of coronary and other seriously ill persons. No reliability or validity data are included in the reports on these measures.

The Litman Disability Self-Conception Scale (Litman, 1961), a Likert-type scale, was designed for use with the orthopedically disabled. Subjects respond on a 5-point scale, from strongly agree to strongly disagree, to items relating to such areas of self-concept as sociability, marriage, sex relations, employment, acceptance, appearance, etc. Litman did not perform an item analysis; however, he indicates that the odd-even reliability coefficient was +.87. There was a significant chi square value ($p < .001$) between professional evaluations of rehabilitation success and total test score, and between physicians' estimates of acceptance of disability and total test score.

Fitting (1954), in a study relating to the adjustment of blind persons to blindness, constructed a 42-item agree-disagree attitude scale consisting of six sub-tests including: Morale, Outlook toward Sighted People, Outlook on Blindness, Family Relationships, Attitude toward Training, and Occupation Outlook. Most of the items related to specific aspects of being blind rather than to general adjustment. Likert techniques of item analysis were used to select items which discriminated between high and low adjustment groups as rated by training instructors or

supervisors and also between high and low total test score groups. Fitting reports an odd-even reliability of +.83. The criterion for evaluating the validity of the scale was the correlation (r=+.55) between the ratings of judges concerning the adjustment and skill level of each S and Ss score on the test.

Other measures. A number of recent investigators used adaptations of the Osgood, Suci and Tannenbaum (1957) Semantic Differential technique to analyze self-attitudes or attitudes toward disability of the disabled in response to various significant stimulus words. Some investigators have modified the Semantic Differential technique by developing their own semantic scales and the factors they reflect (Christopherson & Swartz, 1963). Others have simply adapted pertinent semantic scales and factors from the Osgood et al. original scale to stimulus concepts related to disability adjustment (Downing, Moed & Wight, 1961; Blanton & Nunnally, 1964). Scores obtained on an SMD scale are usually interpreted in terms of Osgood's "factors of meaning" such as Adjustment, Potency, Activity, Evaluation, Understandability, rather than in terms of an over-all self-concept or self-esteem measure.

Christopherson and Swartz (1963) used their adaptation of the SMD, the Perceptual Modification Scale, to investigate the attitudes of disabled husbands and their wives toward the stimulus concepts of "self" and "spouse" as they perceived themselves and each other before and after the onset of disability. Blanton and Nunnally (1964) used an SMD scale to measure the self-attitudes of deaf children and their attitudes toward other disabled persons in a comparison of such attitudes with those of normal children. The two studies do not report reliability or validity data; however, the findings of the Blanton and Nunnally study on sex differences are included in Chapter 4. Downing, Moed, and Wight (1961) developed their version of the SMD scale for investigating the effects of disability and institutionalization on the personality development of children. They present data supporting the reliability and independence of the factors used in their scale, utilizing a technique of summing deviation scores for scale items within each of the factors. The elaborate analysis involved the use of chi square tests of significant difference, the Wilcoxin matched-pairs signed-ranks test and the Kolmogorov-Smirnoff one-sample test. Deutsch and Goldston (1961) used an SMD scale to investigate the attitudes of poliomyelitis patients and their families toward hospitalization and disability, but developmental data are not reported.

A few projectives have been used to measure the attitudes of disabled persons. Gellert (1961) and Sandry (1962), whose picture-story projectives have been discussed under measures of attitudes of the non-disabled, also used these same instruments for eliciting the attitudes of disabled or ill children toward disability. The findings of Moed, Wight, Feshback, and Sandry (1963) using the Children's Seashore House Picture Story Test are found in Chapter 4 in the section on the sex variable.

The Fishman Attitude Scale (Fishman, 1949), a 50-item sentence completion test, was developed to reveal the attitudes of amputees toward the self and the environment. Responses were qualitatively analyzed into several complex statements by psychologists. Each statement described an idiographic trait of S in terms of predicted overt behavior as related to Ss self-concept as reflected in the open-end responses. Reliability of these predictive statements was checked by having two psychologists prepare analyses of the responses. After review of disagreements and discrepancies, the percentage of statements on which there was final agreement was 77 percent, the percentage on which there was total disagreement was 12 percent, and the percentage of statements on which one psychologist felt that there was insufficient data to reach the conclusion of the other psychologist was 11 percent. Predictive validity was obtained against the criterion of physical rehabilitation and vocational adjustment evaluations. Predictive statements compiled from the Attitude Scale, Clinical Interview and Biographical Data criterion evaluations were prepared for three cases and independent clinical psychologists were asked to match predictive and criterion descriptions. The number of successful matchings was significant beyond the .01 level. Reliability and predictive validity data supported the use of the construct of self-concept as determined by the Attitude Scale, Clinical Interview, and Biographical Data for predicting adjustment to prosthesis.

The Berger Sentence Completion Test (Berger, 1951) also used this technique to measure the degree of adjustment of disabled persons. Clinical psychologists scored responses on a 5-point rating scale from "severe maladjustment" to "optimism" and "acceptance," to give individual scores reflecting degree of self-acceptance. This measure was later used in a study by Grand (1961) in conjunction with physicians' and nurses' ratings of Ss acceptance of disability based on behavioral observations. Grand used these measures of acceptance of disability to test three complex hypotheses of Dembo, Leviton, & Wright (1956) relating to the interpersonal relations of disabled and non-disabled persons. Reliability and validity data for this measure were not available to the present authors.

Braen and Weiner (1965) used The Fielding Story Completion Test to measure the degree of acceptance of disability of disabled persons. They do not report reliability and validity data or describe the test. Their findings on the relationship of acceptance of disability to severity of disability are included in Chapter 4.

Richardson, Hastorf, and Dornbusch (1964) used a questioning procedure to elicit self-descriptions of disabled and non-disabled children for comparative purposes. The children were prompted by the statements "Tell me about yourself" and "Tell me more." Responses were divided into 69 content categories and reported in percentage of responses for each content category. Goodman (1963) also used open-end questions to elicit self-descriptions relating to self-esteem and identity of adolescents with speech and hearing disorders. The measure was also used with non-disabled adolescents to study the effect of communication disorders on self-image. No reliability or validity data were attempted either by Richardson et al. or Goodman.

About half the instruments designed for use with the disabled have been directed at specific disability groups but a significant number have been designed for use with a broader group of disabled, e.g., orthopedically handicapped (Litman, 1961) or with "disabled" or "handicapped" persons in general; Christopherson and Swartz (1963), Wright and Remmers (1960), Berger (1951), Braen and Weiner (1965). Gellert (1961), Sandry (1962), and Richardson et al. (1964) have used measures designed for children with any type of disability.

Conclusions

The studies cited indicate that many different techniques have been used in measuring attitudes toward disabled persons. The adequacy of many of the instruments used is difficult to assess since many of them did not attempt to ascertain or did not report reliability or validity data.

Most of the measures designed for use with non-disabled persons have referred to specific disabilities and few instruments have been devised which could be used in investigations of attitudes toward the disabled in general. Barker et al. pointed out in 1953 that the attitudes of disabled persons toward their own disabilities have been inadequately studied. The review of the literature indicates that this is still the case. Most of the measures developed for use with the disabled have been directed toward persons with a specific disability, usually the blind or deaf, and a few for use with the orthopedically handicapped. Only a few have been designed for use with persons with various non-specified disabilities. None of the instruments reviewed were designed for use with both the non-disabled and the disabled.

The review of the literature revealed that use of Likert scales in studies of attitudes toward the disabled is a relatively recent development dating from approximately 1950. Only one Likert scale (Roeher, 1959), other than the ATDP, was directed toward disabled persons in general. Both scales were developed at about the same time. Although an examination of the item phrasing of Roeher's scale suggests that the test could be given to disabled persons, no normative data for disabled persons are available.

In view of all the above limitations, the ATDP was designed to provide an adequate positive-negative scaled measure of attitudes toward the disabled with evidence of reliability and validity; an instrument that could be used both with the disabled and the non-disabled. A Likert-type attitude scale which was relatively short, easy to administer, score, and interpret was deemed most suitable for use in investigations of the relationship of attitudes toward the disabled in general and other variables.

Chapter 3

THE ATDP SCALES

The ATDP was developed following a review of the relevant literature which indicated the need for an objective and reliable instrument to measure attitudes toward disabled persons as a group. Since the research project involving the measurement of attitudes toward the disabled that was to be undertaken would involve collection of data in a competitive workshop environment where subjects were available for only limited periods of time, it was necessary that all research instruments used be relatively short and easy to administer. In view of these considerations, it was decided to construct a short, self-report attitude scale as a primary instrument. While it was recognized that a scale of this type would measure only verbalized attitudes, the authors believed that this type of instrument would be valuable in the research being comtemplated.

It was decided further that the scale would attempt to measure attitudes toward disabled persons in general rather than attitudes toward specific disability groups. The research staff believed that although persons with different disabilities may be viewed as different from one another, there are many similarities. The emphasis was placed on differences between disabled and non-disabled persons. As Himes (1958) has noted, disabled persons may be perceived as "different" from the physically normal and reacted to in much the same fashion as members of a minority group. Further, it was assumed that for some persons, being "disabled" in any form may connote inadequacy. Thus, a measure which would focus on the general concept of disability was considered to be a potentially fruitful device for a program of research dealing with the relationship of psychological factors to the employability of physically disabled persons.

Finally, it was decided that it would be useful to attempt construction of a scale that would measure both the attitudes of disabled persons and the attitudes of non-disabled persons. Although it was recognized that the attitudes of these two groups might reflect quite different cognitions, the use of a single instrument with separate norms and guides for interpretation might prove valuable. Such an instrument could be used in comparative studies to investigate the differences and similarities in the attitudes of disabled and non-disabled persons. In addition, the one scale might serve to measure two types of attitudes; the prejudice of non-disabled persons and the attitudes of disabled persons toward themselves and being disabled.

Item Selection

The procedures used in selecting the items for the ATDP scales were identical for all three forms.[1] As a first step, a large repertoire of statements describing disabled persons was obtained from a review of the literature. These items were then screened by several psychologists to determine their pertinence for use in the scales. Some items were immediately discarded as lacking face validity. Some were retained in their original form. In other cases, wording was changed so that a statement originally pertaining to a specific disability category was made applicable to disabled persons in general. In some cases an item was changed from "positive" to

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[1] Copies of the three forms of the ATDP are found in Appendix A. Form O represents the original 20 item scale. Forms A and B were developed subsequently and are each 30 items long.

"negative" wording, etc. As a result of this screening and review, an initial pool of about 300 items was narrowed down to preliminary scales of 40 to 60 items.

Each of the items on the scales was expressed as a statement with which a person might agree or disagree. Instructions given to respondents indicated that they should rate the extent of their agreement or disagreement with each item. That is, the items were used to form a Likert-type scale on which the respondent is asked to indicate his reaction in terms of a response category ranging from +3 to indicate "I agree very much," to -3 to indicate "I disagree very much." There is no neutral or zero point on the scale; S is forced to make either a positive or negative response. Preliminary versions of the scale were then administered to classes of undergraduate students at Hofstra University.

A technique suggested by Edwards (1957b) was used to select items for the final scales. First, high and low scoring groups were established on the basis of the total score obtained on the preliminary scale. High and low score was determined by dividing the group at the median of the total score distribution. These high and low groups provided an internal criterion of the discriminative ability of each item. In selecting items for Forms A and B an additional "external" criterion was used. For these forms, the high and low scoring groups were selected on the basis of both the median total score distribution of the preliminary sets of items as well as using scores on the original ATDP. In the latter case, original ATDP scores were divided into two groups at the median. Each individual was identified in terms of which half of this distribution his score fell. Forms A and B were divided into two groups according to these scores. Item analysis for each form determined whether or not there was a significant difference between the groups.

When the internal criterion was used for all three forms of the ATDP, the high and low scoring groups were set up on the basis of total score, including score on the item being evaluated. Technically, it would have been more satisfactory if the high and low scoring groups had been set up separately for each item, excluding the scores on that item. This was not done due to limitations in time and personnel. While this represents a technical inadequacy in item analysis, the authors believe that it did not significantly reduce the adequacy of item selection.

The results of the internal item analyses, given in Tables 1 through 3, reveal that all 20 of the items on Form O discriminated between the high and low groups at the .01 level or beyond. On Form A, 29 of the 30 items discriminated at the .01 level or better, and on Form B, 26 of the 30 items so discriminated.

The screening of the discriminative ability of each item on A and B in terms of high and low scores on the ATDP-O is shown in Tables 2 and 3. The results of this analysis indicate that 18 of the 30 items on Form A discriminated at the .01 level or beyond and seven additional items discriminated at the .05 level. Nineteen of the 30 ATDP-B items discriminated at the .01 level or beyond and eight items at the .05 level.

Felty (1965) criticized the ATDP in terms of the fact that the terminology of some of the items was, "... somewhat complex for a number of respondents" (p. 214). He noted that many of the items contain words which either do not appear on the list of 1,000 most frequent and familiar words in the English language or that are on a list of words that have "multiple meanings." He recommended that items should be carefully evaluated for simplicity.

Table 1

Item Analysis: ATDP-O
(Internal Analysis)

ATDP-O Item No.	Statement	t	p
1.	Parents of disabled children should be less strict than other parents.	6.60	.001
2.	Physically disabled persons are just as intelligent as non-disabled ones.[a]	5.46	.001
3.	Disabled people are usually easier to get along with than other people.	3.03	.01
4.	Most disabled people feel sorry for themselves.	3.79	.001
5.	Disabled people are the same as anyone else.	3.85	.001
6.	There shouldn't be special schools for disabled children.[a]	4.07	.001
7.	It would be best for disabled persons to live and work in special communities.	4.30	.001
8.	It is up to the government to take care of disabled persons.	4.20	.001
9.	Most disabled people worry a great deal.	3.17	.01
10.	Disabled people should not be expected to meet the same standards as non-disabled people.	6.84	.001
11.	Disabled people are as happy as non-disabled ones.	4.72	.001
12.	Severely disabled people are no harder to get along with than those with minor disabilities.	4.20	.001
13.	It is almost impossible for a disabled person to lead a normal life.	5.55	.001
14.	You should not expect too much from disabled people.	6.29	.001
15.	Disabled people tend to keep to themselves much of the time.	6.29	.001
16.	Disabled people are more easily upset than non-disabled people.	3.40	.01
17.	Disabled persons cannot have a normal social life.	7.55	.001
18.	Most disabled people feel that they are not as good as other people.	4.23	.001
19.	You have to be careful of what you say when you are with disabled people.	3.85	.001
20.	Disabled people are often grouchy.	4.20	.001

[a]The original wording of this item on which the analysis was performed was negatively phrased.

Table 2

Item Analysis: ATDP-A

ATDP-A Item No.	Statement	Internal Analysis		External Analysis (with ATDP-O)	
		t	p	t	p
1.	Disabled people are often unfriendly.	5.45	.001	6.03	.001
2.	Disabled people should not have to compete for jobs with physically normal persons.	3.39	.01	3.76	.001
3.	Disabled people are more emotional than other people.	3.71	.001	3.29	.01
4.	Most disabled persons are more self-conscious than other people.	3.25	.01	4.01	.001
5.	We should expect just as much from disabled as from non-disabled persons.	4.86	.001	4.01	.001
6.	Disabled workers cannot be as successful as other workers.[a]	4.60	.001	3.75	.001
7.	Disabled people usually do not make much of a contribution to society.	5.21	.001	3.06	.01
8.	Most non-disabled people would not want to marry anyone who is physically disabled.	3.83	.001	4.04	.001
9.	Disabled people show as much enthusiasm as other people.	7.23	.001	5.86	.001
10.	Disabled persons are usually more sensitive than other people.	3.23	.01	1.84	.10
11.	Severely disabled persons are usually untidy.	3.80	.001	3.62	.01
12.	Most disabled people feel that they are as good as other people.	4.20	.001	3.46	.01
13.	The driving test given to a disabled person should be more severe than the one given to the non-disabled.	4.91	.001	2.35	.05
14.	Disabled people are usually sociable.	6.61	.001	2.58	.05
15.	Disabled persons usually are not as conscientious as physically normal persons.	3.23	.01	2.11	.05
16.	Severely disabled persons probably worry more about their health than those who have minor disabilities.	3.45	.01	1.75	.10
17.	Most disabled persons are not dissatisfied with themselves.	2.17	.05	2.83	.01
18.	There are more misfits among disabled persons than among non-disabled persons.	5.84	.001	1.89	.10

[a]The original wording of this item on which the analysis was performed was positively phrased.

(Table continued on next page)

Table 2 (continued)

ATDP-A Item No.	Statement	Internal Analysis		External Analysis (with ATDP-O)	
		t	p	t	p
19.	Most disabled persons do not get discouraged easily.	3.82	.001	2.26	.05
20.	Most disabled persons resent physically normal people.	4.94	.001	2.61	.05
21.	Disabled children should compete with physically normal children.	4.97	.001	3.12	.01
22.	Most disabled persons can take care of themselves.	3.96	.001	2.36	.05
23.	It would be best if disabled persons would live and work with non-disabled persons.	3.18	.01	1.96	.10
24.	Most severely disabled people are just as ambitious as physically normal persons.	5.29	.001	4.80	.001
25.	Disabled people are just as self-confident as other people.	5.99	.001	3.06	.01
26.	Most disabled persons want more affection and praise than other people.	5.12	.001	3.58	.01
27.	Physically disabled persons are often less intelligent than non-disabled ones.	3.98	.001	2.43	.05
28.	Most disabled persons are different from non-disabled people.	2.91	.01	1.95	.10
29.	Disabled persons don't want any more sympathy than other people.	6.66	.001	3.72	.001
30.	The way disabled people act is irritating.	5.50	.001	3.36	.001

Table 3

Item Analysis: ATDP-B

ATDP-B Item No.	Statement	Internal Analysis		External Analysis (with ATDP-O)	
		t	p	t	p
1.	Disabled persons are usually friendly.	1.83	.10	2.05	.05
2.	People who are disabled should not have to pay income taxes.	3.00	.01	2.38	.05
3.	Disabled people are no more emotional than other people.	2.78	.01	3.37	.001
4.	Disabled persons can have a normal social life.	4.44	.001	3.24	.01
5.	Most physically disabled persons have a chip on their shoulder.	3.64	.001	4.37	.001
6.	Disabled workers can be as successful as other workers.[a]	4.12	.001	2.17	.05
7.	Very few disabled persons are ashamed of their disabilities.	2.75	.01	3.70	.001
8.	Most people feel uncomfortable when they associate with disabled people.	.32	NS	1.80	.10
9.	Disabled people show less enthusiasm than non-disabled people.	6.00	.001	2.60	.01
10.	Disabled people do not become upset any more easily than non-disabled people.	2.91	.01	2.52	.05
11.	Disabled people are often less aggressive than normal people.	1.29	NS	2.62	.01
12.	Most disabled persons get married and have children.	4.00	.001	4.08	.001
13.	Most disabled persons do not worry any more than anyone else.	3.78	.001	3.89	.001
14.	Employers should not be allowed to fire disabled employees.	3.03	.01	1.95	.10
15.	Disabled people are not as happy as non-disabled ones.	4.48	.001	3.64	.001
16.	Severely disabled people are harder to get along with than are those with minor disabilities.	6.88	.001	4.56	.001
17.	Most disabled people expect special treatment.	4.71	.001	4.85	.001
18.	Disabled persons should not expect to lead normal lives.	4.68	.001	2.03	.05
19.	Most disabled people tend to get discouraged easily.	4.88	.001	2.03	.05
20.	The worst thing that could happen to a person would be for him to be very severely injured.	2.26	.01	3.90	.001

[a]The original wording of this item on which the analysis was performed was negatively phrased.

(Table continued on next page)

Table 3 (continued)

ATDP-B Item No.	Statement	Internal Analysis		External Analysis (with ATDP-O)	
		t	p	t	p
21.	Disabled children should not have to compete with non-disabled children.	2.60	.01	5.41	.001
22.	Most disabled people do not feel sorry for themselves.	6.50	.001	4.50	.001
23.	Most disabled people prefer to work with other disabled people.	3.78	.001	3.90	.001
24.	Most severely disabled persons are not as ambitious as other people.	5.86	.001	3.11	.01
25.	Disabled persons are not as self-confident as physically normal persons.	2.15	.05	2.79	.01
26.	Most disabled persons don't want more affection and praise than other people.	2.60	.01	2.48	.05
27.	It would be best if a disabled person would marry another disabled person.	4.56	.001	1.93	.10
28.	Most disabled people do not need special attention.	2.63	.01	4.59	.001
29.	Disabled persons want sympathy more than other people.	6.15	.001	2.79	.01
30.	Most physically disabled persons have different personalities than normal persons.	3.68	.001	2.42	.05

Administration

The ATDP may be administered as either an individual or a group test. The test contains items to which the subject responds by indicating the extent of his agreement or disagreement to each according to the following scale:

+3 I agree very much
+2 I agree pretty much
+1 I agree a little
-1 I disagree a little
-2 I disagree pretty much
-3 I disagree very much

Instructions are printed at the top of the page. Answers are recorded to the left of each statement on Form O while separate answer sheets are provided for Forms A and B.

Although instructions are printed on the test, the examiner should also read them aloud, and answer any questions that arise. Care should be taken not to discuss individual statements. Questions concerning the meaning or applicability of specific statements should be answered by suggesting that S may interpret the statement any way that he pleases. The examiner should emphasize that every item must be responded to, and that neutral responses cannot be given, i. e., some extent of agreement or disagreement should be indicated for each item.

In most cases, the test can be administered in about 15 minutes. In its usual form the test requires that the respondent be able to read and write. However, it can be adapted for use by persons whose disability prevents them from reading or writing. Under such conditions the items may be read to S and the examiner can record the responses. If the test is administered in this fashion, the examiner must decide whether the usual norms and interpretations can still be applied. This will usually be the case when there has been no discussion of the items.

Scoring

In scoring the ATDP the first step is to change the signs of the items with positive wording. By definition, a positive item is one which indicates that disabled persons are not "different" from non-disabled persons. Once the signs of the positive items have been changed, the algebraic sum of all the item scores is obtained. The sign of the sum is then reversed, from negative to positive or positive to negative. The total scores obtained in this fashion can range from -60 to +60 on the twenty-item scale, Form O; and from -90 to +90 on the thirty-item Forms A and B. To eliminate negative values a constant is then added to make all of the scores positive. This constant is 60 for the twenty-item scale and 90 for the thirty-item scale. The resulting score range is from 0 to 120 (Form O) or from 0 to 180 (Forms A and B) with a high score reflecting positive attitudes. Illustrations of scoring the ATDP are given in Tables 4 and 5. If more than 10 percent of the items are left blank (3 items on the 20-item scale or 4 on the 30-item scale) the test is considered not scorable. If 10 percent or fewer items are omitted, the completed items are scored as usual with the customary constant added to eliminate negative values. This is equivalent to assigning a neutral value to the omitted items.

Table 4

Scoring the ATDP; Forms O, A & B

1. Change the signs of the positively worded items:

Form O	Form A	Form B
2 5 6	5 9 12	1 3 4
11 12	14 17 19	6 7 10
	21 22 23	12 13 22
	24 25 29	26 28

2. Add all of the responses algebraically.

3. Change the sign of the algebraic resultant.

4. Add the constant:

Form O: Add +60
Forms A & B: Add +90

Alternate Scoring Method

In an attempt to determine the meaningfulness of the weighting of ATDP responses (from +3 to -3) investigations were conducted in which the scale was rescored disregarding the response weights (Human Resources, 1962). Each of the responses was rescored giving a +1 to all positive responses and a -1 to all negative responses. These plus and minus responses were added algebraically and a constant of 20 was added to yield the rescore value.

One investigation used a sample of 81 non-disabled college students and correlated their scores on the ATDP-O with and without weighting, using the technique discussed above. The resultant correlation coefficient of +. 92 is significant beyond the . 01 level. Rescores were also performed with Forms A and B using two samples of 50 non-disabled college students randomly selected from our files. The correlation for Form A between weighted (regular) scoring and re-scoring was +. 93, and for Form B the correlation was also +. 93. One sample of 50 disabled Ss was rescored on the ATDP-A and a correlation of +. 95 was found between scoring methods.

In view of the consistency of these results, with all of the correlation coefficients being above +. 90, one can conclude that relatively little is lost through the use of the simplified scoring method. Further data are needed using this scoring method in research studies to see whether relationships with outside criteria are affected. These data are currently being gathered at Human Resources. In the interim, it appears that the simplified scoring method may be used.

Table 5

Sample Scoring: ATDP-Form O

Sample Response	Item Number	Statement
-2	1.	Parents of disabled children should be less strict than other parents.
+3[a]	2.	Physically disabled persons are just as intelligent as non-disabled ones.
-2	3.	Disabled people are usually easier to get along with than other people.
-3	4.	Most disabled people feel sorry for themselves.
+3[a]	5.	Disabled people are the same as anyone else.
-2[a]	6.	There shouldn't be special schools for disabled children.
-3	7.	It would be best for disabled persons to live and work in special communities.
+1	8.	It is up to the government to take care of disabled persons.
-2	9.	Most disabled people worry a great deal.
+1	10.	Disabled people should not be expected to meet the same standards as non-disabled people.
+2[a]	11.	Disabled people are as happy as non-disabled ones.
+2[a]	12.	Severely disabled people are no harder to get along with than those with minor disabilities.
-2	13.	It is almost impossible for a disabled person to lead a normal life.
+1	14.	You should not expect too much from disabled people.
-2	15.	Disabled people tend to keep to themselves much of the time.
+1	16.	Disabled people are more easily upset than non-disabled people.
-3	17.	Disabled persons cannot have a normal social life.
-2	18.	Most disabled people feel that they are not as good as other people.
+1	19.	You have to be careful of what you say when you are with disabled people.
-3	20.	Disabled people are often grouchy.

-27	Uncorrected sum of changed scores.
+27	Change sign of sum.
60	Add constant of 60.
87	Transformed score.

[a] Change algebraic sign of response to this item.

Table 6

Normative Data; ATDP Forms O, A, B
Means & Standard Deviations

Form	Sex	Disabled Mean	Disabled Standard Deviation	Disabled N	Non-Disabled Mean	Non-Disabled Standard Deviation	Non-Disabled N
O	Male	78.84	16.44	1079	72.80	15.53	1689
	Female	78.86	15.66	219	75.42	13.48	1410
A	Male	120.43[a]	24.00[a]	191[a]	106.65	20.73	337
	Female	123.58[a]	22.65[a]	103[a]	114.18	20.48	405
B	Male	118.66[a]	25.25[a]	114[a]	110.16	21.47	345
	Female	123.78[a]	22.55[a]	77[a]	113.45	22.02	549

[a] Human Resources data only

Norms

A relatively low score on the ATDP indicates that the respondent perceives disabled persons as different from physically normal persons. A high score indicates that the respondent perceives disabled persons as being not very different from non-disabled persons. As is true for all Likert-type scales, no absolute interpretation of the raw score is possible since the degree of the attitude expressed by each item is not known as it would be with a Thurstone scale (Edwards, 1957b). Likert scales indicate the attitude of the individual relative to a normative group. In order to interpret a score it is necessary to compare the individual's score with scores obtained by members of an appropriate reference group.

Research with the ATDP has suggested that different norms for disabled and non-disabled persons are useful. Table 6 provides the norms derived from Ss tested by Human Resources combined with the norms sent to us by other users of the ATDP. (For a list of studies which provided data included in the total norms see the starred references in the bibliography.) Only those studies which provided separate means, standard deviations, and sample sizes for males and females, disabled and non-disabled, were used. Table 6 shows that disabled persons express significantly more positive attitudes towards disabled persons than do the non-disabled. This is true for both male and female subjects. The tests of significant differences between the scores of disabled persons and non-disabled persons are given in Table 7a.

Data for males and females also indicate the usefulness of separate normative data. Table 6 shows that on all three forms of the ATDP, both disabled and non-disabled females score higher than do males. However, Table 7b shows that these differences, though consistent, were significant for only the non-disabled Ss. A discussion of the findings of the individual studies of sex differences on the ATDP can be found in Chapter 4. These results support the need for separate norms, although it appears that separate norms for disabled males and females may not be as essential as for non-disabled males and females.

Table 7a

Tests for Significant Difference between Disabled and Non-disabled Ss on the ATDP

Form	Sex	N	t[a]	p
O	Male	2768	9.59	.001
	Female	1629	3.07	.001
A	Male	528	6.63	.001
	Female	508	3.82	.001
B	Male	459	3.21	.001
	Female	626	3.76	.001

[a] In every case disabled Ss scored higher than the non-disabled.

Table 7b

Tests for Significant Difference between Males and Females on the ATDP

Form	Sample	N	t[a]	p
O	Disabled	1298	.017	N.S.
	Non-Disabled	3099	5.04	.001
A	Disabled	294	1.11	N.S.
	Non-Disabled	742	4.95	.001
B	Disabled	191	1.46	N.S.
	Non-Disabled	894	2.21	.05

[a] In every case females scored higher than males.

Table 8 may be used in the interpretation of the scores of disabled or non-disabled males or females. The percentile equivalency scores indicate the percentage of that particular group scoring below the given score on the ATDP, i.e., what percentage of persons tended to be less accepting.

Table 8

Percentiles: ATDP Forms O, A, B

		Males - Scores		Females - Scores	
	Percentile	Dis.	Non-Dis.	Dis.	Non-Dis.
Form O	99	110	112	113	113
	95	104	98	103	106
	90	100	92	102	102
	75	92	83	91	92
	50	80	72	81	79
	25	68	63	71	67
	10	57	53	60	57
N		1035	273	159	400
Form A	99	168	157	166	160
	95	157	140	154	150
	90	152	135	148	142
	75	138	122	139	128
	50	122	109	125	113
	25	102	94	112	100
	10	89	83	98	88
N		191	277	103	341
Form B	99	168	162	173	163
	95	159	148	166	154
	90	153	140	154	141
	75	136	126	137	128
	50	121	108	124	113
	25	100	95	108	99
	10	87	81	92	85
N		114	320	77	524

The norms tables presented here should be considered only as suggestive. Although based on relatively large numbers, the samples included were not selected randomly. As a result they can provide only an approximate idea of the person's relative score. It is strongly suggested that each investigator develop his own norms for the particular group with which he is working. As such norms are obtained, if copies of them are forwarded to the authors of this monograph, they will be incorporated into revised norm tables to be published in the future.

Interpretation

The simplest interpretation of ATDP scores is made by utilizing the operational definition of the items used in the scale. That is, one could interpret the results in terms of perceived differences between disabled and non-disabled persons. According to this interpretation, a score that is high relative to other scores would indicate that the respondent perceives disabled persons as being quite similar to non-disabled persons. A score that is low would indicate that the respondent perceives disabled persons as being "different" from non-disabled persons.

However, the majority of items on the ATDP suggest that where there is a difference perceived, this difference has negative connotations. Therefore, one may wish to extend the interpretation to suggest that a low score not only reflects the fact that the respondent perceives disabled persons as different but also to some degree "inferior" or "disadvantaged."

A somewhat more complex interpretation of ATDP scores may be based on distinctions made in the literature. For example, Himes has provided a statement of ways in which people may differ in their attitudes toward disabled individuals. He divided people into two types in terms of their reactions.

> The first type admits the behavior limitation of the person and allows for the necessary adjustment to this limitation for him to carry on social intercourse. This pattern of reaction regards the disabled person as capable of normal social behavior in areas not directly affected by the physical impairment. This pattern of social reaction to the physically disabled is objective and desirable. It is, however, not widespread in our society.
>
> The second crystallized pattern of reaction rests on the device of social stereotyping. The tendency here is to respond to a total personality. The handicapping character of the physical disability is thought to be diffused throughout the total personality behavior system of the person.
>
> On the basis of this one observable fact, a presumably consistent totality is constructed. Social behavior thus becomes a response to the total person who is identified and classified by reference to the readily observed physical disability. Reaction to the physically disabled person thus appears reasonably comparable with the recognized disability which serves as a key or clue to this total personality (Himes, 1951, pp. 11-12).

The positive-negative classification of ATDP items fits well with Himes' description of individualized and stereotypical attitudes, although the scale results in a continuum of scores rather than a dichotomy.

The authors believe that it is possible to go beyond the operational definition of the meaning of the test score, and suggest that the scale has different meanings depending upon the physical condition of the respondent. If the respondent who is physically disabled perceives disabled persons as different, and by implication inferior in some respects, the authors suggest that he may be projecting his attitude toward himself in his responses to ATDP items. In this sense one might argue that the ATDP represents a measure of the disabled person's self-concept. A high score would suggest relatively greater self-acceptance than a low score.

A similar assumption was made by Fitting (1954) in designing a rating scale to measure the attitudes of blind adults toward problems of blindness. Fitting assumed that a blind person's attitudes toward problems of blindness would reflect that person's "level of adjustment." The items on his rating scale were phrased impersonally, e.g., "Blind people are..." rather than in personal terms, e.g., "I am...." Impersonal phrasing may have the advantage of making the disabled S less defensive and, consequently, more honest. This is similar to the principle of

eliciting attitudes in which the phraseology "How do others feel about..." is assumed to elicit more honest responses than "How do you feel about...."

If the respondent who is physically normal perceives disabled persons as "different" and "inferior," the authors suggest that the ATDP reflects "prejudice" toward them. Bates (1965) and Bell (1962) have both criticized the ATDP in terms of this assumption. The present authors believe that the more operational notion that the ATDP reflects the perception that disabled people are "different" from physically normal persons is more easily defended than the assumption of "lack of acceptance." Nonetheless, as will be noted later in Chapter 6, the ATDP does seem to be related to a number of indices of prejudice.

The extent to which these interpretations may be legitimate is a question left to each individual using the ATDP. His decision should be based on the degree to which he believes the authors' assumptions are valid and supported by the relationship between ATDP scores and other measures discussed in Chapters 4 through 7.

Responses to single items should not be interpreted since no evidence for item validity is presented in this monograph. The authors believe that a meaningful interpretation is possible only with regard to the general pattern of responses to the items as a set, and not with individual items.

Unless an instrument is perfectly reliable, one would expect the subject's score to vary somewhat from administration to administration. This variability is reflected in the standard error of measurement (which is based on the standard deviation of the test and its reliability). While these values would vary to some degree as a function of characteristics of the specific group tested, Table 9 presents some general guides as to the expected variability with each form of the test.

Table 9

Standard Error of Measurement for ATDP Forms O, A and B; Test-Retest Reliability

Form	N	Standard Deviation	r	SEM
O	37	13.20	+.76	6.47
A	84	21.42	+.78	10.07
B	81	22.60	+.83	9.31

Interpretation of the standard error of measurement (SEM) is similar to interpretation of the standard deviation. That is, if one uses the observed score as a point of reference, the subject's true score on the test should be within ± 1.00 SEM 68% of the time, ± 2.00 SEM slightly more than 95% of the time, and seldom more than ± 3.00 SEM. Where possible, each examiner should estimate the SEM (see Guilford, 1956) for his population from the formula:

$$SEM = \sigma\sqrt{1 - r_{xx}}$$

Where: σ = the standard deviation of the group,
r_{xx} = the reliability coefficient of the group.

The ATDP seems to be sufficiently reliable and sufficiently highly correlated with appropriate measures to make it a useful research tool when used with groups of respondents in

attempting to understand the dynamics of attitudes toward disabled persons. As a clinical tool to make tentative judgments about individual cases, however, research to date indicates it is a substantially less adequate instrument although quite comparable to other measures of attitude. Therefore, users of the ATDP are cautioned against the interpretation of individual scores as they would be with most self-report personality scales.

Reliability

There have been many studies in which the reliability of the ATDP has been reported. In reporting the results below, separate data are presented for disabled and for non-disabled persons. The data are also presented separately for each of the three forms of the scale. The net result of these studies suggests that the test has a degree of reliability comparable to other attitude scales of similar length.

As indicated in the publication Technical Recommendations for Psychological Tests and Diagnostic Techniques (American Psychological Association, 1954), there are three major types of reliability: stability, equivalence, and stability-equivalence. Each of these approaches defines reliability from a slightly different point of view, and each makes slightly different assumptions. The reliability of the ATDP has been investigated using each of these approaches.

Stability measures of reliability involve retesting an individual with the same form of a test following a period of time. It is frequently referred to as test-retest reliability. This approach assumes that the characteristic being measured is stable, and that during the time between test administrations the individual has not undergone any experience which might be expected to seriously affect the behavior measured.

Eight estimates of the stability of Form O are available, but only one such estimate for Form A and two for Form B. These data are presented in Table 10[3]. As can be seen by inspection of the table, the eight stability coefficients for Form O range from +.66 to +.89 with a median of approximately +.73. The single estimate for Form A is +.78 while the two values for Form B are +.71 and +.83. Time intervals range from two weeks to 18 months. Considering the fact that the ATDP is a short instrument and that reliability is partially a function of the length of an instrument, the authors believe that these reliability coefficients are comparable to those found with other attitude scales.

A different approach to estimating the reliability of a psychometric device is referred to as equivalence reliability. While stability measures indicate the influence of time of administration upon the reliability of a scale, equivalence measures indicate the influence of the particular sample of items chosen. Theoretically, the items on an instrument represent a sample selected from a universe of items. To the extent that a particular sample of items is representative of the universe, it should correlate highly with another sample presumably drawn from the same universe.

Two different approaches to measuring equivalence reliability have been used with the ATDP. The first is widely known as the split-half method in which the odd and even numbered items are scored separately and the correlation between the two is corrected for length using the Spearman-Brown Prophecy formula (Guilford, 1956). The alternate approach to equivalence involves construction of two different but presumably equivalent forms of a scale. If both forms are administered to the subject at the same time, to the extent that the items represent random samples drawn from the same population, there should be a high correlation between them. This technique is sometimes referred to as immediate parallel forms reliability.

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[3] All reliability tables are in Appendix B.

Data concerning the split-half equivalence reliability for each of the three forms of the ATDP are presented in Table 11. These reliability coefficients range from +.75 to +.85 for Form O, from +.73 to +.89 for Form A, and from +.72 to +.87 for Form B. There is no apparent difference between disabled and non-disabled groups. Once again, considering the length of the scales, the authors believe these reliability coefficients are comparable to those usually found in other scorable measures of attitude.

Data regarding the estimate of the equivalence reliability through "immediate parallel forms" are presented in Table 12. These reliability coefficients range from +.57 to +.83, with a median of +.67. The coefficients are somewhat lower than those obtained through the split-half technique and thus the authors are reluctant to assume that the various forms of the scale measure the same attitudes. While there seems to be common variance between the various forms, further investigation of the equivalence of the three different forms of the scale appears to be required.

The final approach to the measurement of reliability is known as "stability-equivalence" reliability. This involves the administration of one form of a scale on one occasion and a different form on some subsequent occasion. This approach is sometimes known as the "delayed parallel forms" approach. There is limited evidence for the stability-equivalence reliability of the ATDP. The available data are presented in Table 13. As can be seen, the reliability coefficients presented here range from +.41 to +.83 with a median of +.74. Time intervals range from two weeks to five months. (The authors are unable to account for the one extremely low coefficient of +.41.) All of the stability-equivalence coefficients are based on non-disabled college students. Further work will be conducted by the staff at Human Resources Center to adequately investigate the stability-equivalence reliability of the ATDP.

While there is some question about the extent to which the different forms of ATDP are equivalent, the authors believe that there is reasonably good evidence that the ATDP is a reliable scale. This conclusion is based upon a consideration of reliability coefficients customarily obtained with attitude scales of comparable length and format.

Validity: What the Test Measures

The crucial question with regard to any measurement device is "what does the test measure?"

In constructing the ATDP, the staff began with the assumption that the scale would reflect different characteristics when used with disabled persons than when used with non-disabled persons. It was assumed that when a disabled person responded to test items referring to disabled persons in general he would, in effect, be using himself as a frame of reference. In a sense, it was assumed that he would identify with the concept "disabled person." That is, our basic assumption was that when the ATDP was used with disabled persons it might provide a measure of acceptance of disability and further, self-acceptance.

On the other hand it was assumed that when the ATDP was administered to non-disabled persons it would provide a measure of attitudes toward disabled people viewed as a group. The non-disabled respondent would not identify with the disabled, but would use the group as a frame of reference. Based on this assumption, scores on the ATDP could be interpreted in terms of acceptance of or prejudice toward disabled persons. It was assumed that the scores indicate whether the respondent tends to accept disabled persons as the same as everyone else or whether he tends to view them as different and/or requiring special treatment.

In view of this distinction between the use of the test with disabled and non-disabled persons, the ATDP may almost be considered to be two instruments. As a consequence, different evidence was collected to establish the validity of the test for use with each group.

To establish the validity of the test with disabled persons, validating criteria included measures of the personality, behavior, and self-concept of disabled persons. To establish the validity of the ATDP with non-disabled persons, ATDP scores were correlated with measures of prejudice, and with other variables that have been shown to be correlated with attitudes of prejudice. In some cases, similar data were collected for both disabled and non-disabled groups where similar relationships were anticipated.

Distinctions are usually made between at least four different types of measures of validity: content validity, predictive validity, concurrent validity, and construct validity (American Psychological Association, 1954). As noted in the original monograph by Yuker, Block, and Campbell (1960), evidence for the validity of the ATDP is based largely upon construct validity. This technique seeks to confirm a series of predictions pertaining to the relationship of the variable being measured to other variables. If most of the predictions are found to be correct, and none yields results that are diametrically opposed to the predictions, the common variance between studies is frequently assumed to represent the construct in question. In the present case it was predicted that persons with low ATDP scores (people who show prejudice or non-acceptance) would be likely to behave in certain ways, while people with high ATDP scores (non-prejudiced or accepting) would behave in other ways. In testing these predictions it was anticipated that there would not be confirmation of the hypotheses at high levels of probability since the dependent variables used are complex and usually reflect the interaction of a number of variables. Nonetheless, one would expect to discover certain predictable relationships. By observing whether the correlations were significantly different from zero and in the direction predicted on the basis of theoretical considerations of attitudes toward the disabled, it was possible to indicate the adequacy of the measuring instruments. Thus, the validity of the ATDP was measured by correlating ATDP test scores with a number of other variables. These variables were divided into two broad classifications since, as noted earlier, there may be reason to believe that the ATDP might measure different attitudes when used with physically normal persons as compared with disabled persons.

In Chapters 4 through 7 evidence in support of the validity of the ATDP is presented in the form of discussions of how ATDP scores are related to a number of specific variables. Each variable is discussed in terms of the theoretical predictions made and evaluated in terms of the data.

Fakeability

Whenever a self-report instrument is used, it is important to determine the extent to which the respondent's test-taking attitude influenced the results. Thus, if S is motivated to do well on a test, he may try to "fake" the test to make a good impression. An estimate of the fakeability of the test can be obtained by placing the individual in a situation in which he is encouraged to respond dishonestly and then comparing his "faked" score with his original score.

The fakeability of the ATDP-O was measured by having a class of 62 beginning psychology students take the test under two conditions (Yuker et al., 1960). Initially the group was asked to participate in a research project and the test was administered under standard conditions. After the forms had been completed and collected, the class was asked to complete a second form. They were instructed:

> "Now write the word FAKE at the top of your test. This time when you take the test I want you to try to make as good an impression as possible. One of the problems with using this type of instrument is that it can be faked. I want you to try to make as good an impression as possible without making it too obvious that you were not responding honestly. Remember, try to make a good impression - whatever you think that may be."

The mean score for the first administration was 76.1 with a standard deviation of 14.00, and the mean score for the second administration was 79.2 with a standard deviation of 16.00. A t-test produced a value of 1.17 which was not significant.[2] A correlation between the scores on the two administrations was +.22. The relatively low correlation indicates that an individual can distort his scores under different administrative conditions. However, the fact that the difference between means is not statistically significant suggests that the test is not particularly fakeable, since the students were not able to make their responses "fit" with the scoring key so as to earn higher scores.

Data relating to the fakeability of the ATDP-O were also obtained by comparing the ATDP scores of persons employed at Abilities, Inc. (Yuker et al., 1960) with the scores of disabled persons applying for positions at the company. The ATDP-O was completed by all job applicants along with the job application form. Although the ATDP scores were used for research purposes only, not for purposes of selection, it is probable that many applicants perceived the ATDP as a selection device. If an applicant perceived the test in this way, he might try to fake his answers in order to create a good impression and get the job.

Test data from Abilities employees are customarily obtained under research conditions much less apt to result in faking. To encourage honesty, the Abilities employees are assured that their test scores are used for research purposes only and in no way affect their job status. Individual interviews with employees with whom the research staff has established a high degree of rapport suggests that we have been generally successful in this goal. Test results and other research data obtained from employees are not available to management. The mean ATDP score obtained by the applicants was 80.4, the mean for employees was 80.8. The obtained critical ratio (t-test) was 0.3, which is not statistically significant. Thus, it appears that applicants did not obtain higher scores although it seems reasonable to assume that they perceived that it would be to their advantage to do so.

While the present authors consider this data to be supportive of the notion that the ATDP is not fakeable, an alternative explanation may be offered for the findings cited here. For example, certain types of contact with disabled persons have been found to be related to more positive attitudes (see Chapter 7). It is conceded that employees' scores might have been lower if they had been tested prior to extended contact with disabled co-workers. As a function of employment in the corporation and the consequent close personal equal-status contact with other disabled persons their scores may have increased, suggesting greater acceptance of both themselves as productive individuals as well as of disabled people in general. The fact that there is no significant difference between applicants and employees might mean simply that the applicants were able to raise their scores by "faking" to the level that the employees had reached only after continued exposure to other disabled persons. Further, it is possible that the employees' scores might have been equally high when they were applicants but that the source of psychological support for the scores (i.e., faking vs. exposure to disabled persons) might have changed.

Social Desirability and Response Set

In the last 15 years, a number of investigators (Couch & Keniston, 1960, 1961; Edwards, 1957a; Edwards & Walker, 1961; and Peabody, 1966) have questioned the validity of self-report measures, suggesting that such instruments might be measuring generalized attitudes of social desirability or acquiesence rather than measuring the specific attitudes under discussion.

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[2] All statistics reported as significant in this monograph are significant beyond the .05 level unless otherwise noted.

Edwards (1957a) noted that there is a tendency for subjects to favorably endorse items which are socially desirable and fail to endorse items which are socially undesirable, and has found relatively high correlations between his Social Desirability Scale, and a number of widely used self-inventories.

To test whether subjects responding to the ATDP-O were primarily endorsing statements according to their social desirability, 70 college students were administered Edwards' (1957a) 39-item Social Desirability (SD) Scale along with the ATDP-O (Yuker et al., 1960). On the Social Desirability Scale the students obtained a mean score of 31.2 with a standard deviation of 6.5. These values were compared, by means of a t-test, with the norms presented by Edwards. The standard deviation was found to be not significantly different from Edwards' data for a college population, but the mean for this sample of students was significantly higher than Edwards' norm groups, i.e., there was a greater tendency for the present group to answer the questions in a socially desirable fashion. However, when the scores on the SD Scale were correlated with the ATDP scores, a product-moment correlation coefficient of +.21 was obtained. Since this correlation was found to be not significantly different from a correlation of zero, it was concluded that the ATDP measures something other than social desirability as defined by Edwards.

Additional evidence is available in three other studies. Ferketic (1964) was concerned with the possibility that the ATDP was contaminated with social desirability and acquiescent response sets. He constructed twenty new items and added these to the ATDP-O to produce a 40-item scale. The new items were designed specifically to minimize the influence of the response sets with which he was concerned. The 40-item scale was found to correlate -.07 with the Marlowe-Crowne Social Desirability Scale. However, using the original 20-item ATDP-O, Ferketic found a nonsignificant correlation of -.24 with the Social Desirability Scale. Therefore, it would appear from his data that Ferketic's additions to the ATDP were not necessary.

Siller and Chipman (1963) and Siller (1964) report a number of investigations of the relationship between social desirability and the ATDP-O, using both the Edwards SD Scale and the Marlowe-Crowne SD Scale. Using the Edwards scale and the ATDP-O, for 235 junior high school students the correlation was +.20 ($p < .01$), for 229 senior high school students it was +.16 ($p < .05$). The correlations, though significant because of the large sample size, were quite low. When senior high school and college samples were used in correlating the ATDP-O with the Marlowe-Crowne SD Scale, nonsignificant correlations of +.08 and +.09, respectively, were obtained. Finally, Harrison (1965) found no significant correlation (r not given) between the ATDP-O and the Edwards SD Scale with a sample of 70 college students.

Thus, the present authors conclude that social desirability is not a significant component of responses on the ATDP-O. In the few cases where significance was found, the positive correlation indicates that social desirability factors account for less than six percent of the variance of ATDP scores. No data, regarding social desirability, are available for Forms A and B.

Another type of response set which has been investigated is acquiescence. This represents the tendency of the respondent to endorse test statements. In order to limit the influence of this factor on ATDP scores, an attempt was made to approximately balance the number of positively and negatively worded items on the ATDP scales. This has not been entirely successful since most of the stereotypes (and thus the "familiar" wording of attitude scale items) tends to suggest the presence of negative characteristics of the disabled. The data to be reviewed suggest that although there are not an equal number of positive and negative items, the scale is still independent of acquiescence. The original form of the scale contains 5 positive and 15 negative items. Form A has 12 positive and 18 negative, and Form B has 11 positive and 19 negative items.

Using a sample of 229 high school students, Siller and Chipman (1963) and Siller (1964) found a correlation of -. 13 ($p < .05$) between ATDP-O scores and responses to an abbreviated version of the Couch-Keniston Acquiescence Scale. This scale measures a tendency to acquiesce or to agree with what S feels is expected of him. For 284 college students, the correlation between the Couch-Keniston and ATDP-O scores was -. 16 ($p < .05$). Similarly, the Fulkerson Acquiescence Response Scale, which measures acquiescence independent of adjustment status, was correlated with the ATDP-O for three samples. The correlation coefficients were -. 10 (not significant) for 235 junior high school students, -. 24 ($p < .05$) for 229 high school students, and -. 07 (not significant) for 284 college students. Siller also correlated Overall Agreement Scores (OAS) with ATDP-O scores. OAS refers to the total number of non-disability self-report attitude items to which S answers "true." Two types of OAS items were utilized: OAS I refers to adjective items and OAS II refers to MMPI-type personality items. Agreement scores for OAS II, with the junior high school sample, correlated -. 16 ($p < .05$) with the ATDP-O. The correlations between agreement scores and ATDP-O for the senior high school sample for the OAS I and OAS II were -. 08 (not significant), and -. 25 ($p < .01$), respectively. For the college students these coefficients were -. 13 ($p < .05$) and -. 10 (not significant), respectively for OAS I and II.

In addition, Ferketic (1964) correlated scores on ATDP-O with a balanced F Scale from the MMPI (Jackson & Messik) as a measure of response acquiescence. A nonsignificant correlation of -. 07 was obtained with the sample of 19, indicating a lack of a significant relationship between these two measures.

Ferketic's 20-item expansion of the ATDP, mentioned in the discussion of social desirability, was also correlated with the balanced F Scale from the MMPI, and a value of -. 14 was obtained. As in the case of social desirability, expanding the ATDP-O did not prove necessary to eliminate effects of response acquiescence in the ATDP.

Thus, the present authors conclude that acquiescence, like social desirability, is not a significant component of responses on the ATDP-O. Although correlations between ATDP-O scores and measures of response acquiescence were consistently negative, and some were significant, the correlations were so low that in all cases they accounted for less than seven percent of the variance.

Factor Analyses

One of the questions raised regarding the ATDP scale has concerned its unidimensionality. Several investigators have suggested that the scale is not factorially pure. Many persons concerned with measuring attitudes toward the disabled feel that such attitudes should be measured by factorially derived subscales rather than one "impure" scale (Siller & Chipman, 1964; Felty, 1965; Jaques & Linkowski, 1965; Lukoff & Whiteman, 1961). The criticism that the ATDP is not unidimensional is undoubtedly justified since it is questionable whether any attitude as complex as the one it attempts to measure could be unitary. A number of studies have been conducted which have attempted to determine the nature of the underlying factors.

The first study was carried out at Human Resources while the scale was being developed. From the start the scale was constructed to include two types of items. Some of the items dealt with specific characteristics and implied that with respect to these characteristics, disabled persons are either similar to or different from non-disabled persons. Examples of "characteristics" items are: "Disabled persons often show less enthusiasm than non-disabled persons;" "Disabled people are less aggressive than normal people;" and "Disabled people are not as happy as non-disabled ones." Other statements reflected the respondent's view of how disabled persons should be treated. Examples of "treatment" items are: "People who are disabled should not have to pay income taxes;" "Employers should not be allowed to fire disabled employees;"

"Disabled children should not have to compete with non-disabled children;" and "Most disabled people do not need special education."

A comparison was made of ten items on ATDP-O relating to "characteristics" (items 2, 3, 4, 9, 11, 12, 15, 16, 18, 20) with the other ten items relating to "treatment," to test the hypothesis that the two sets of items were independent. A random selection of 50 Ss from our files were scored in such a way as to yield subscale scores for each set of items on the ATDP-O. The correlation between subscale scores was +.46, which is significantly different from zero at the .01 level. Mean values for the subscales were not significantly different from one another. These data suggest that the two types of items are not independent and may be considered to contribute approximately equally to the total score. Considering these results and the small number of items on each subscale, the use of separate subscales on the ATDP does not appear to be appropriate.

A comprehensive factorial study was reported by Siller and Chipman (1964). In one part of the study they reported that a factor analysis of the responses of 245 high school students to ATDP-O yielded two factors. Factor I included 53 percent of the common variance and was labeled Hypersensitive-Depressed. They reported that this factor involved "... acceptance of statements claiming the handicapped to be grouchy, worrying, more easily upset than nondisabled, inclined to self pity, keeping to themselves, etc." (p. 836). Factor II was labeled Benevolent Inferiority and accounted for the remaining variance. Items reflecting this factor indicated "... that it is almost impossible for the disabled to lead normal lives, that one should not expect too much from the handicapped, they should not be expected to meet the same standards, and cannot be as happy as the nondisabled" (p. 836).

It should be noted that the explanations of the two factors are quite similar to the definitions of the two types of items used in constructing the scale. Examination of the data obtained by Siller and Chipman indicates that of the ten items with the highest loadings on Factor I, eight correspond to the ten items originally selected as "characteristics" items. Thus, Siller and Chipman appear to have provided statistical evidence supporting the original assumption of two basic factors underlying the ATDP.

In a personal communication, Dr. Marceline E. Jaques (1965) reported on a factor analytic study of the responses of Danish subjects to the ATDP-A. Dr. Jaques and Donald C. Linkowski factor analyzed the 30 items of ATDP-A using the Principal Components Method with a Varimax Rotation. Nine components emerged accounting for 52.5 percent of the total variance. Two of these factors, accounting for 13.8 percent and 8.6 percent of the total variance, have been examined. The first factor, which is difficult to name, contained items which labeled disabled persons as different, having lower I.Q., wanting more affection and praise, not as successful, not as conscientious, usually untidy, and not making as much of a contribution to society. The second factor, which Jaques reported as seeming to refer to "social energy" or "work vitality" contained items indicating that disabled persons should not have to compete for jobs, show as much enthusiasm as the non-disabled, should have as much expected from them, and should have to take a more severe driving test. These factors do not parallel the characteristics and treatment factors discussed earlier. However, together they account for only a small percent of the total variance, and as yet the other components have not been analyzed.

Felty (1965) has also questioned the unidimensionality of the ATDP. Rather than approaching this problem through factor analysis, he used a Guttman "scale analysis" approach. Felty's analysis suggested that while it might be possible to construct a seven-item scale (which included seven of the ten "treatment" items of Form O), this scale failed to reach the criteria of reproducibility suggested by Guttman. Despite this Felty suggests that further research and analysis of this "... seven item scale would appear to be indicated" (p. 91).

Lukoff and Whiteman (1961) felt that a factorially-derived subscale approach was most suitable in developing their Attitudes to Blindness Scale. They reported a high positive correlation between strong pity-sympathy attitudes toward the blind and a tendency to espouse separate community facilities for the blind. This resulted in combining these types of items into one Protection-Interaction index. They stated their belief that favoring segregated community services is an expression of wanting to give special help and consideration to the blind and contend that such types of segregating attitudes are not indicative of rejection as in the case of segregating attitudes toward ethnic groups. The present authors feel, however, that stereotypical attitudes of pity, sympathy, and special consideration function as a socially acceptable form of rejection and should be included with negatively expressed attitudes. The ATDP scoring is based on this assumption.

The authors contend that a factor analytic approach to the ATDP is not particularly useful, in part because of the relatively small number of items, and in part because no attempt was made to sample the large universe of possible items relating to attitudes toward disabled persons. Because the ATDP is so short, any factors that emerged would be even shorter and would have lower reliability. It would be necessary to elaborate on the factors to develop longer scales, which would result in a different and perhaps better instrument. However, the potential gain in reliability and representativeness of items might be balanced by a loss in ease of administration and scoring. In addition, studies appear to indicate that while a number of independent factors might emerge, typically the major factor tends to account for a large proportion of total variance. Such a factor frequently represents a "general" attitude factor which is analogous to what the authors believe the ATDP measures in addition to its other factorial components.

In comparing a factorially constructed scale with one which is not factorially pure, it would seem relevant to determine not only the intercorrelations between the subscales of the factored scale with the total score of the non-factored one, but also to compare the correlations obtained between criterion measures and the non-factored scale with multiple correlations of subscales of the factorially pure measure and the same criterion. If these multiple correlations account for a higher proportion of variance in the criterion measures than the present instrument, the case for the use of such measures is well established. Nonetheless, the present "impure" scale does appear to yield meaningful, statistically significant correlations with a number of theoretically and practically interesting and important criteria. It would appear that even the "confounded" concept of attitudes toward the disabled does have some meaning and utility.

It is possible that a factor analytic scale developed from the ATDP might provide further insights into the construct of attitudes towards disabled persons, and other investigators are to be encouraged in their attempts to develop such measures.

Disability Reference Group

As was indicated earlier in this chapter, the ATDP was devised to measure attitudes toward disabled persons in general rather than attitudes toward any subgroup of persons with a specific disability. This was a departure from most other attitude scales discussed in Chapter 2. This departure from the more usual approach has been questioned by investigators who claim that the broad reference group of "disabled persons" is not particularly meaningful (Siller, 1964; Bates, 1965). They would prefer that specific disability categories be used as reference groups, as was done in most of the earlier studies.

Siller (1964) comments that some Ss reported difficulty in responding to the term "disabled," and has used eight types of disability as reference groups in developing his Feeling Check List and Social Distance Scale. He then summed attitude scores toward the eight groups for measures of attitude toward the disabled in general.

Bates (1965) reported on a study in which the terms "handicapped," "wheel chair," "nervous breakdown," or "heart condition," were substituted for "disabled" in the ATDP items. His detailed findings are discussed in Chapter 6. Since he found the different reference groups resulted in significantly different test scores he concluded that the term disabled is not a "valid representative of the specific conditions which have been experienced in association with that concept" (p. 61).

Despite these criticisms, the authors believe that an instrument such as the ATDP, which uses a general reference group, is needed. They assume further that while persons with differing disabilities may face different problems and require different modes of adjustments and may, in fact, elicit different attitudes from others, there is a common factor associated with all disabilities. Indeed, it is possible that this common factor may not only extend across physical disability categories but to the mentally retarded, emotionally disturbed and even perhaps the culturally deprived, all of whom may be considered "disabled" in one respect or another. The ATDP is concerned with the extent to which there may be a common set of problems across a variety of physical "disability" categories.

One advantage to the use of a general reference group rather than a more specific one is that a general measure may be more likely to elicit responses that might otherwise be suppressed. It is reasonable to assume that if one has negative attitudes toward disabled persons (whether at a conscious or subconscious level) verbalization of these negative attitudes might be withheld. Cook and Selltiz (1964) point out that one frequently used technique to elicit such responses is to provide a general reference group, thereby making the target of the response relatively indistinct. With such a frame of reference an individual may feel freer to respond negatively. On the other hand, specific reference groups may be more likely to elicit positive attitudes than "disabled persons." The reference group may be made more specific by referring to an amputee. It may be made even more specific by referring to a person who has lost an arm. A still more specific frame of reference can be obtained by referring the respondent to a photograph of an individual amputee and perhaps even more specific, by referring to an individual known to the respondent.

This theory is consistent with the empirical evidence from studies using specific versus general reference groups in the measurement of attitudes towards disability. The fact that the ATDP correlates relatively highly with measures of general ethnic prejudice lends support to this point of view. In this respect, it is possible to think of the ATDP as a measure of attitudes toward people in general. It would not be surprising for a factor analytic study of the scale to reveal such a factor as one of the major sources of variance.

Modifications of the ATDP

Several investigators have modified the ATDP-O by substituting other terms for the term "disabled" in the ATDP-O items. As mentioned earlier, Bates (1965) constructed four scales by substituting handicapped, wheelchair, nervous breakdown, or heart condition in the wording of the ATDP items. Freed (1964) constructed two new scales by substituting the terms mentally ill or alcoholic. The results of these substitutions are discussed in Chapter 6.

Other investigators have made different modifications. Ferketic (1964), as discussed under Social Desirability and Response Set, added 20 new items to the original 20 items. Using Pearson's r, the new scale correlated +.70 ($p < .01$) with ATDP-O, and using the rank difference correlation, the value was +.53. Both correlations were performed with data obtained from a sample of 19 graduate students. McCourt (1963) selected 19 of the 20 items on ATDP-O and incorporated them into a 97-item scale, measuring attitudes toward authoritarianism, minorities, and older persons as well as the disabled. He used four rather than six levels of agreement or disagreement as response categories. Felty (1965), whose Guttman scaling modification of the

ATDP-O was discussed in the section on Factor Analysis, also used four rather than six response categories. Felty also added a scaled intensity of response item after each ATDP-O item used. The S was, thus, asked to rate the intensity of his response to each attitude item.

Except for those cases in which the ATDP was adapted for use in measuring attitudes toward different reference groups, most of the modifications do not appear to have improved the utility of the scale.

Summary

The development of the ATDP was predicated on the need for an objective and reliable instrument to measure attitudes toward disabled persons as a group. The scale had to be relatively short, easy to administer, and simply scored. In developing the ATDP emphasis was placed on perceived differences between disabled and non-disabled persons. In this regard, disabled persons may be perceived as different from the physically normal and reacted to in much the same fashion as members of a minority group. On the other hand, disabled persons may be perceived as basically the same as non-disabled persons. In addition, the ATDP was developed for use with both disabled and non-disabled subjects.

Three alternate forms of the ATDP have been developed; Form O consists of 20 items, Forms A and B are 30 items each. The scales are in Likert format; the responses range from "I Agree Very Much," scored +3, to "I Disagree Very Much," scores -3. There is no neutral or zero point on the scale. The scales were subjected to internal and external analyses by which items discriminating between high and low scorers were selected for inclusion in the final versions of the ATDP forms.

The scale may be administered either individually or to groups of subjects and takes about 15 minutes. The ATDP may also be adapted for use by persons whose disability prevents them from reading or writing. The method of scoring the ATDP is presented in detail in this chapter. Scores range from 0 to 120 on Form O and from 0 to 180 on Forms A and B. In all cases a high score reflects positive attitudes, and vice versa. An alternate scoring technique has been investigated. This technique involves disregarding the weighting of responses and counting of positive and negative responses only. There appears to be a high correlation of the scores obtained by these two techniques but norms using the alternate system have not been developed as yet.

Since no absolute interpretation of raw score values is possible with a Likert-type scale, normative data from both Human Resources studies and other investigations are presented for the reader's use. Percentile equivalency scores are also presented.

Disabled subjects have been found to score consistently higher on the ATDP and, both for this reason as well as the fact that the scale may measure different precepts when administered to disabled and non-disabled subjects, norms are presented for both groups. It has also been found that female subjects score consistently higher on the ATDP than do males and as a result separate norms are provided.

ATDP scores may be interpreted as reflecting either the subject's perceiving the disabled as basically the same as or different from the non-disabled; a high score indicates the perception of the disabled as being similar to the non-disabled while a low score indicates the perception of dissimilarity between the disabled and the non-disabled. The perception of differences in characteristics of and treatment of the disabled might be interpreted as rejection of the disabled or prejudice. At the same time, this scale may indicate the degree of positive and negative stereotypy in the non-disabled person's attitudes toward the disabled. Beyond this, it might be assumed that the respondent who is physically disabled and who perceives disabled

persons as different from non-disabled persons, may be projecting his attitude toward himself. In this sense, the ATDP may represent a measure of the disabled person's self-concept.

Investigations of the ATDP's reliability have resulted in a median stability coefficient of +.73 for Form O. The estimates for Forms A and B are also within the range of +.71 to +.83. Equivalency reliability coefficients derived from the split-half method for Form O range from +.75 to +.85 with similar ranges for Forms A and B. The coefficients of immediate parallel forms reliability are not as high as the split-half coefficients. The range of the parallel forms reliability coefficients is from +.57 to +.83. The stability equivalency reliability coefficients for the three forms range from +.41 to +.83 with a median of +.74.

To establish the validity of the scale with disabled persons, criteria included measures of personality, behavior, and self-concept. To establish validity with non-disabled persons, ATDP scores were correlated with measures of prejudice and with other variables shown to be correlated with attitudes of prejudice. Correlational techniques were the prime method of indicating the relationships between ATDP scores and other theoretically related variables. All "validity" data are presented in Chapters 4 through 7.

Investigations of the fakeability, or the extent to which the respondent's test-taking attitudes influence the test results, suggest that the ATDP is relatively not fakeable since no significant differences were found between the scores of faked vs. non-faked administrations. It has also been found that neither social desirability nor acquiescence accounts for significant portions of variance in ATDP scores.

In the original construction of the scale two types of items were used; "characteristics" items and "treatment" items. Factor analyses by other investigators have yielded a number of factors, some of these appear to be similar to the two "built in" factors. It was concluded that attempts to construct factorial measures of attitudes toward the disabled should continue for the additional insight they may provide. Several investigators have modified the ATDP in their research. These modifications include the substitution of other terms for "disabled" in the wording of ATDP items. Among the terms that have been substituted are handicapped, wheelchair, nervous breakdown, heart condition, mentally ill, and alcoholic. After reviewing the modifications and criticisms relating to the ATDP, the present authors concluded that the ATDP scales will continue to be useful when a relatively reliable and valid, easy to administer instrument is required to measure general acceptance of the disabled.

Chapter 4

DEMOGRAPHIC CORRELATES OF ATTITUDES TOWARD DISABLED PERSONS

In the next four chapters data will be presented relating to correlates of attitudes toward disabled persons. In this chapter there will be a discussion of the relationship between these attitudes and a number of demographic factors. Chapter 5 will include a discussion of personality correlates of attitudes toward disabled persons. Chapter 6 will discuss attitudinal correlates. Finally, in Chapter 7, experiential and behavioral correlates of attitudes toward disabled persons will be discussed.

Most of the data to be presented are derived from studies in which the ATDP was used. However, integrated with these data will be results cited in studies using other measures of attitudes toward disability. It should not be assumed that these other measures of attitudes toward the disabled tap the same dimensions as the ATDP. Nonetheless, each of them purports to reflect some aspect of attitudes toward the disabled and the authors believe that citation here will contribute toward a better understanding of the basic concepts underlying these measures. Relationships between some of the other measures and the ATDP are reported in Chapter 6.

The discussions in these chapters will serve two functions. For one thing they will help clarify the meaning of the construct of attitudes toward disabled persons. If it is assumed that a reliable measuring instrument represents an adequate operational definition of attitudes toward disabled persons, then in presenting the correlates of such attitudes, we may obtain a clearer picture of the meaning of the attitudes and the utilization of such measures in practice and research. These discussions can also serve to illustrate the validity of the ATDP as a measuring instrument. To the extent that results obtained with other instruments are comparable to those obtained with the ATDP, these results can be interpreted as additional indications of the validity of the ATDP.

In the present chapter we shall discuss the relationship between attitudes toward disabled persons and a variety of demographic variables. Among the variables to be discussed are the most frequently used background variables such as age, sex, nationality, and educational grade level. In addition, we shall discuss the relationship between attitudes of disabled Ss themselves and characteristics of disabled persons such as the nature and the extent of their disability.

Age

The relationship of age to attitude is a very complex one. Since most studies of attitude development have indicated that attitude formation and attitude change are related to exposures and experiences rather than to age *per se*, one would predict that no relationship would be found between age and attitude in a sample of adults. Thus, the present authors expected that no relationship would be found between age and attitude toward disabled persons. Further, it was expected that when relationships were found, they should be explainable on the basis of experiences rather than of age.

Investigation of the relationship between age and attitude is further complicated for young persons by the fact that age is confounded with education. Comparing the attitudes of junior high school students with those of high school or college students, one finds that the two groups differ in educational experiences as well as in age. Studies in which educational level is the primary variable are discussed in a later section of this chapter. In this section of the chapter we will discuss those studies which examine age as the primary variable, noting when the age variable may be confounded with educational level or with other variables.

The findings on the relationship of age to attitudes of non-disabled people toward disabled persons are quite contradictory (see Table 14[1]). Of the six studies using the ATDP, four reported no significant relationship between age and ATDP scores (Bell, 1962; Gilliland, 1965; Siller, 1963 & 1964; Siller & Chipman, 1965) and two reported significant relationships (Wilson, 1963 and Siller, 1964). In addition, three studies using measures of attitudes towards the disabled other than the ATDP reported either differences in attitudes between age groups or significant correlational data (Simmons, 1949; Auvenshine, 1962 and Lukoff & Whiteman, 1963). Thus, five studies reported a relationship while four did not.

One of the studies reporting a relationship was that of Wilson (1963) who found a correlation of -.33, significant at the .05 level, between age and ATDP-O scores. However, since the sample consisted of 145 nurses, some of whom had several years of experience and others who had limited experience, these results could easily have been confounded by both experience and contact with the disabled. Furthermore, only 38 Ss were used in the correlational computation, and Wilson does not indicate how these Ss were selected. Occasionally it has been found (see Chapter 7) that people who work with the disabled in a medical setting may exhibit a less positive attitude toward the disabled than persons with other types of contact. Since older nurses generally have had more contact with the disabled in a medical setting this factor may contribute to the negative correlation between age and attitude among nurses in Wilson's study.

Siller (1964) found a correlation of -.16 ($p < .01$) between age and ATDP-O scores for 235 junior high school students. While the correlation is significant, it cannot be given too much credence since it indicates that only 2.6 percent of the common variance is accounted for by age and statistical significance is probably a result of the large sample size. The low degree of correlation could be accounted for by rapid changes in social maturity at this age level and negative attitudes might result from developing attitudes of conformity and rejection of people who are different in any way.

The three investigators using measures of attitudes other than the ATDP who found a relationship between age and attitude did not always agree as to the direction of the relationship. Auvenshine (1962) used his Attitudes Towards Severely Disabled College Students scale which he found to correlate +.52 and +.63 with the ATDP-O for two samples. Auvenshine reported that attitudes of older male undergraduate and graduate students were significantly more favorable toward disabled college students ($p < .01$) than those of younger male college and graduate students, but that there was no significant difference in attitudes of female students in the same age categories. No data were presented for the combined groups of males and females. Auvenshine indicated that non-disabled students' attitudes toward disabled students tend to be generally neutral and that correlations with age are lower than correlations with variables such as grade level.

In contrast, Lukoff and Whiteman (1963) using an Attitudes to Blindness scale (which is quite different from both the ATDP and the Auvenshine scale), reported that younger persons showed more favorable attitudes toward the blind than older persons. The sample included high school students, college students, and adults. No data were given in the report of the study. Similarly, Simmons (1949) indicated that younger age groups revealed more understanding attitudes

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[1]All tables are found in Appendix B.

toward blindness than did older age groups. The original study was not available to the present authors and, therefore, the age range and significance of these differences is not known. This study made use of a ten statement test in which S was to respond, "true" or "false," to questions about blindness. However, Simmons' scale is not directly comparable to either the ATDP or Auvenshine's scale.

Although these studies are not directly comparable because of differences in age ranges and other sample characteristics, and in attitudes toward specific disabilities measured, it is noted that when significant relationships were found, the younger age group was reported to have more favorable attitudes toward disabled persons than the older age group, except at the college level. This must be compared with findings of Siller (1963 and 1964) on the grade level variable as reported in greater detail later in this chapter. Siller found that college students were significantly more favorable in their ATDP-O scores than junior or senior high school students. Siller and Chipman (1964) do not report these differences when the sample was expanded to include additional college students and some female adults. However a t test performed by the Human Resources staff on the data of the Siller and Chipman 1964 report produced a t value of 4.03 ($p < .001$), when comparing the combined means of the two youngest (480 junior and senior high school students) and the two oldest (628 college students and female adults) groups. The two older groups had significantly higher ATDP scores. The female adults consisted of only 75 Ss; the rest of the older sample was comprised of college students. This finding might well be an artifact of the large sample used and not practicably meaningful. On the other hand, this is consistent with Auvenshine's finding that at the college level, older students tend to have more favorable attitudes toward the disabled.

The results of another study reviewed under educational grade level in this chapter are pertinent to the findings of both Auvenshine and Siller when discussing the relationship between age and attitudes toward the disabled. Horowitz, Rees, and Horowitz (1965) reported that college students had significantly more favorable attitudes than either high school students or sixth graders in rating personal and achievement characteristics of the deaf. They also found that PTA members were significantly more favorable than the sixth graders. The first set of findings would support Siller and Auvenshine in that older Ss with higher educational levels were more favorable in attitude than younger Ss with lower educational levels. In these data, education and intelligence factors vary with age. The second finding used the sample with the widest age range of any of the studies. When compared with the direction of the other significant correlations this finding suggests that where the relationship of age to attitudes toward the disabled exists, it may depend on the spread of the age ranges being compared. Any such conclusions would have to be tentative since the various studies were measuring attitudes toward different disabilities and used different measures.

The results are not readily clarified by those studies in which no significant relationship between age and attitudes toward the disabled was found. For example, unlike Wilson who found a significant negative correlation between attitude and age in a sample of nurses and nursing students, Gilliland (1965) reports no significant relationship between age and ATDP-O score for 377 registered and practical nurses. However, the correlations and significance levels were not reported to the present authors. Like Wilson's study, however, the age variable for this sample is contaminated by such other factors as experience, education level and contact related to the disabled. Gilliland's sample, although using Ss whose ages overlapped the age range of Wilson's Ss, also included a large percentage of older nurses. This suggests that educational level, experience and contact may have affected the attitudes of younger nurses, while these may no longer be potent factors for the older nurses since their backgrounds in these regards have probably become more homogeneous. Thus, the findings with this sample suggest that the age variable per se shows no significant relationship to attitudes.

Bell (1962) also found no significant relationship between ATDP-O and age (data not reported). Although the age range is not given, and since the Ss were all hospital employees or

rehabilitation workers, they are assumed to be non-student adults. This may account for the results being different from samples which included children, adolescents or college students. Siller and Chipman (1965) have also found a non-significant relationship between age and ATDP-O with a small sample of 65 adults and including a few late adolescents ($r = -.12$). In addition, the Siller (1964) study, which found a significant correlation between ATDP-O and junior high school student's age, found no significant correlation between ATDP-O and age of senior high school students ($N = 229$, $r = +.04$).

An overall analysis of these studies with non-disabled Ss suggests that there is probably little relationship between age and attitudes toward disability. Some of the studies reported no relationship. In those where significant relationships were reported, the size of the correlation was usually quite small, and accounted for little of the variance. Additionally, the frequently large samples may display significant correlations merely as a statistical artifact. In those studies that reported significant differences, the nature of the sample often indicated that the factor of age was confounded with factors of educational level and contact with disabled persons. Consequently, the present authors conclude that, in general, there is little or no correlation between age and attitudes toward disability among samples of non-disabled persons.

The lack of relationship between age and attitudes toward disability is somewhat clearer with respect to disabled Ss as shown on Table 15. Of eight studies, five reported no significant relationship between age and attitudes towards being blind. Only two studies have reported a significant relationship to age: one measuring attitudes to being blind (Larkin, 1962) and one using the ATDP (Human Resources, 1960). One study (Bauman, 1958) reported no significant relationship, but the correlation given appears significant.

Wada (1964), who used the ATDP-B with a group of physically disabled employees of a sheltered industrial workshop, indicated that her Ss may have encountered difficulty in reading and in comprehension of items on the scale. Wada reported no significant relationship between age of her Ss and ATDP-B scores but did not report statistical data.

Bauman (1958) reported no significant correlation between the attitudes of 2210 blind adults toward blindness and their ages. However, the correlation coefficient reported ($r = +.18$) is significant at the .05 level. It may be that Bauman was referring to an interpretation of meaningfulness rather than significance. A subtest of Bauman's Emotional Factors Inventory called Attitudes re Blindness was used. In contrast to Bauman, Larkin (1962) found a significant difference between different age groups (older adolescents higher), and scores on an attitude toward blindness scale which he prepared himself, using a sample of blind adolescents. No statistical data are given in the report. In addition, Larkin's sample seems to confound both intelligence and level of education with the age factor. His sample of 235 adolescents, 11 through 20 years of age, consisted of only those who were part of a school population. It was stated that students of lower intelligence had dropped out of school at age 16 and that, therefore, the age groups of 16 through 20 were both higher in intelligence and had a greater educational background.

The Human Resources (1964) study found no significant correlations between age of disabled employees and ATDP scores in three samples. One used Form O ($N = 247$, $r = -.10$); one used ATDP-A ($N = 238$, $r = +.01$); a third used ATDP-B ($N = 156$, $r = +.09$). An earlier Human Resources study (1960), found no significant difference in ATDP-O scores between older and younger disabled employees ($N = 253$), when dichotomized at the mean age (chi square = 2.69). However, the same study (Human Resources, 1960) produced a significant difference in the ATDP-O scores of 253 disabled employees when the data were dichotomized at over age 50 and under age 50 (chi square = 4.39, significant at the .05 level), indicating that significant results for age and attitude relationships seem to depend on the age ranges sampled and compared.

When comparing these studies, one must keep in mind the above qualifications, and the fact that the measures and statistics used differed. Nevertheless, it should be noted that the samples used in the studies with non-statistically significant results were all adult while the

samples of the two studies finding statistically significant results consisted of one adolescent group and one group dichotomized at over and under 50 years of age. Generally, the findings with disabled Ss are consistent with the tentative conclusions made on the studies with the non-disabled, i.e., there appear to be no significant relationships between age and attitudes toward disabled persons which are not contaminated by variables such as educational level, contact, or artificial age dichotomy. Unfortunately, controlled studies of this relationship have not been reported.

Sex

Since many studies show attitudinal differences between the sexes, and since these data are readily obtained, a number of studies have attempted to determine what relationship, if any, exists between attitudes toward disability and the sex of the respondents. Some of these studies made use of tests of significance in order to determine whether there are any significant differences between the average ATDP scores of males and females. Other studies used measures of relationship such as the point-biserial correlation in order to determine whether or not the two variables are related.

In the studies to be reported there is some discrepancy in the results: some of the studies reported a relationship between sex and ATDP scores, while other studies reported a lack of relationship. This discrepancy may be accounted for, at least in part, by the differences in the statistical techniques used. The data for the sex variable with non-disabled Ss are summarized in Table 16. Of the 13 studies in which data were reported on sex differences in the ATDP scores of non-disabled persons, 10 used samples of either high school or college students.

In the majority of these studies, significant differences between males and females were reported, with females scoring significantly higher (more accepting) on the ATDP than males in all cases where statistical significance was found. The studies in which females scored significantly higher include those reported in the original monograph (Yuker, Block & Campbell, 1960); as well as Chesler (1965); Ferketic (1964); Fischbein (1964); Freed (1964); Siller (1964); and Maglione (1965).

In contrast to these studies, no significant differences were reported in studies by Fischbein (1962), Bell (1962), Coggin (1964), Knittel (1963), Freed (1964), Felty (1965), Siller (1964), and Siller and Chipman (1965). Four of these nonsignificant findings were based on adult samples (Siller & Chipman, Fischbein, Felty, and Bell) the other four used college and high school students Felty used a sample of Costa Rican adults and possible cultural factors should be considered in interpreting his results. In addition, Felty modified the ATDP-O using Guttman scaling techniques which made the scoring system not comparable to the original ATDP.

Freed's (1964) study with VA hospital employees (40 percent of the work force) showed females scoring significantly higher. Form O of the ATDP was used and two items were deleted because they referred to children, raising questions of whether the reliability would be comparable to the original scale values, even though the findings are consistent with the other six studies showing females to have higher mean ATDP scores. Ferketic (1964), who also found females scoring significantly higher, added 20 new items to the ATDP-O. The ATDP-O and the expanded scale were found to correlate +.70. Support for the finding that attitudes of females toward the disabled are more favorable is the Siller (1964) study which indicates that femininity, as measured by the Berdie Femininity Scale, is significantly positively correlated ($r = +.16$, $p < .05$, $N = 283$ college students) with ATDP-O scores. This study has tangential relevance although it does not measure the sex variable directly.

The results obtained with the instruments other than the ATDP scale were somewhat similar to those described above. Since the results of the data analyses were not completely reported in most of these studies, no table of findings has been developed. All but one of these studies (Lukoff & Whiteman, 1963) was done using samples of either children, high school or college students. A total of five studies have indicated that non-disabled females are more accepting of disabled persons than are non-disabled males. These results were obtained in a study by Auvenshine (1962) who compared attitudes of 316 male and female college students on the Attitudes Toward Severely Disabled College Students Scale ($t = 4.84$, $p < .001$). Similarly, a study by Moed, Wight, Feshback and Sandry (1963), reports that female children are more positive in attitudes as measured by the Children's Seashore Picture Story Test than boys ($N = 190$; no statistical significance reported). A study by Szuhay (1961), also indicated that female children showed more positive attitudes toward both disabled persons and towards Negroes than did boys using the Children's Picture Sociometric Attitude Scale ($N = 144$; $p < .05$, t not reported). A study by Baskin and Herman (1951) using a questionnaire on attitudes toward persons with cerebral palsy, showed that female college students tend to be more accepting of persons with cerebral palsy than are male college students ($N = 89$); and a study by Cowen and Cowen (1963) showed that French female college students tend to have more favorable attitudes toward blind persons than have French male college students on an Attitudes to Blindness Scale ($N = 50$). A peripheral study by Gowman (1957), using a ranking scale of disability types, indicated that there were no sex differences when 104 high school seniors ranked disabilities in terms of how severe each disability would be to face.

Two studies with instruments other than the ATDP indicated that males scored higher than females. Cowen and Cowen (1963) reported that French male college students tended to have more favorable attitudes toward deaf persons than did French female college students on an Attitudes to Deafness Scale ($N = 50$). Lukoff and Whiteman (1963) using a rating scale of the blinds' ability to perform tasks found that male adults were somewhat more favorable in their attitudes toward blind persons than were female adults. These discrepancies from the usual direction of difference between the sexes could be accounted for either by the different measures used, or by the factor of nationality in the Cowen and Cowen study, or the difference in sample (adults vs. younger persons) and different disability types measured in the Lukoff and Whiteman study.

The results obtained on studies of disabled persons yield results similar to those reported for non-disabled persons (see Table 17). In three studies performed at Abilities, female employees scored higher than male employees, (Yuker et al., 1960; Human Resources, 1964); in one study, using the ATDP-O, females scored higher, but the differences were not significant (Human Resources, 1964). No significant relationship between sex and ATDP scores for disabled Ss was recorded by either Arnholter (1963) or Wada (1964). In both of these studies, however, measures of correlation rather than of significant difference were used, and if the difference were small it would be less likely to produce a significant correlation than a significant t value.

Three studies have used other measures of attitudes toward the disabled to investigate the sex variable with disabled subjects. Larkin (1962), using a short attitudes to blindness scale, reports that female adolescents tend to show better adjustment to being blind than male adolescents. The t value was not given, but it reported as having borderline significance. Blanton and Nunnally (1964) using a Semantic Differential, found that deaf girls rated blind people, deaf people and self significantly (.05 level) more favorably than deaf boys on the four factor scales of the SMD except for the potency factor. However, Moed et al. (1963) using a projective picture-story test, found that disabled girls were more sensitive to signs of disability in the pictures than boys. The results obtained by Larkin, and Blanton and Nunnally conform to the general trend of the findings, while those of Moed et al. are difficult to interpret. It is not clear whether increased sensitivity reflects more positive or more negative attitudes.

Since the results reported above are not entirely consistent, it is difficult to draw a definite conclusion. However, since a clear majority of the studies have indicated differences between the sexes at the age levels of childhood through college age, for non-disabled persons and for adult employed disabled persons, it would seem most prudent to use separate norms for males and females for interpretation of ATDP scores. Consequently, separate norms have been provided in this report, despite the contention by Siller and Chipman (1963), that separate norms are not needed.

Nationality and Race

Within the last two or three years the ATDP scale has been translated into a number of foreign languages. While little comparative data have been forwarded to Human Resources, the staff does have reports of some studies which have been conducted. One such study is that of Jaques and Linkowski (1966) in which ATDP-A scores of Danish, Greek, and American Ss were compared. The data reported so far have indicated that the mean score of people in Denmark (Mean ATDP-A Score = 110.61) were not significantly different from the norms presented in this monograph, although t values were not reported. Other studies are still in progress. A report by Cowen and Cowen (1963) indicated that students in the United States were significantly more favorable ($t = 4.95$, $N = 161$, $p < .001$) in their attitude toward blind persons than were French college students. The measure used was the Attitudes to Blindness scale (Cowen, Underberg, & Verrillo, 1958) described in Chapter 2.

In a study of disabled Goodwill employees reported by Arnholter (1963), no significant difference was found between scores on the ATDP-O of members of different races. There have been too few studies of nationality and race carried through to completion at the time this monograph goes to press to draw any definite conclusions. However, at this time it would seem as if the norms that are appropriate for use with white persons in the United States might be applicable to Negroes in the United States and perhaps to other national groupings.

Marital Status

Few studies have been conducted which have compared the ATDP scores of married and unmarried persons. Bell (1962) compared the ATDP-O scores for non-disabled married and unmarried hospital employees and found no significant chi square differences. Similarly, comparisons of the ATDP-O scores of married and unmarried disabled persons have indicated no significant differences between the two groups. In the earlier monograph (Yuker, Block & Campbell, 1960), no significant chi square differences were found between 227 married versus single Abilities employees and dichotomized ATDP-O scores. In addition, no significant t values were found between any combination of single ($N = 86$), married ($N = 181$), widowed ($N = 25$), divorced ($N = 7$), or separated ($N = 8$) groups in a later study (Human Resources, 1964).

While one might predict that disabled persons who are married would get higher ATDP scores than unmarried disabled persons, this has not been found to be the case. Apparently, differences between disabled persons who marry and those who do not marry are not related to attitudes as measured by the ATDP. Certainly one would expect a number of other factors to be involved, such as whether or not the disabled person is married to another disabled individual and whether the marriage occurred before or after the individual became disabled.

Urban versus Rural

Three studies have been reported comparing the attitudes of people living in cities with those living in rural areas. The first, performed by Roeher (1959), reported that in a sample of

over 300 Canadian adults, urban residents exhibited more favorable attitudes toward disabled persons than did rural residents on Roeher's Likert scale. Similar results were found by Bateman (1962) in a group of 92 sighted children who had never known blind children. Urban children were significantly more positive (chi square = 6.37, $p < .01$) on a questionnaire rating the performance capacities of blind children. However, contradictory results were reported by Lamers (1965). He found that high school students in a city of population under 2,500 scored higher on the ATDP-B than high school students in a city with over 100,000 population. Statistical data were not presented.

Educational Grade Level

In discussing educational level, a distinction should be made between the educational level of Ss who are currently students and the final educational level reached by Ss who have completed their formal education. Since these two groups cannot be combined meaningfully, they will be discussed separately.

As has been already noted in the section on age, the educational level of non-disabled persons who are presently students is highly correlated with age. Three studies reported on the relationship of grade level and ATDP scores (Lamers, 1965; Siller, 1964; and Knittel, 1963). Lamer's (1965) results suggested that college freshmen tended to be more accepting than college sophomores on the ATDP-B. However, no data or significance levels were reported.

Siller (1964) found that college students ($N = 283$) had more favorable attitudes on the ATDP-O than either junior high school students ($N = 235$), or senior high school students ($N = 229$), but that junior high school students were more accepting than senior high school students. Siller reports than an F test of the means of the three groups were significant beyond the .01 level (F ratio not given).

Knittel (1963) found that 11th and 12th graders ($N = 58$) scored higher on the ATDP-O than eighth graders ($N = 50$). A t test of the means performed at Human Resources showed the difference to be significant at the .01 level ($t = 4.01$). Little can be concluded from comparing these studies since they involve different grade level ranges and dichotomies, and different statistical procedures. The Siller and Knittel studies would tend to support an hypothesis that more advanced grade levels produced generally more favorable attitudes toward the disabled. However, further data reported by Knittel support Siller's contention that the relationship, if any, is not one of simple linearity.

Knittel grouped his sample of 7th through 12th graders into four groups; five 7th - 9th graders (junior high) who had a disabled sibling and five matched controls with no disabled sibling or close disabled friend; four 10th - 12th graders (senior high) who had a disabled sibling and four matched controls with no disabled sibling. Among the nine control Ss who had no disabled sibling or friend, Knittel found that junior high school students had higher mean ATDP-O scores than senior high school students. Although the significance of this difference is not reported and the sample is extremely small, these results support the findings with the much larger sample of Siller (1964), who also reported that junior high school students are more accepting than senior high school students. As proposed in the discussion of age, attitudes of social consciousness and conformity which are apt to be prominent at this age and grade level, may account for increasing non-acceptance of the disabled during this period. However, Knittel (1963) reported no significant difference between junior and senior high school students when he used a modification of Auvenshine's Attitudes Towards Severely Disabled College Students scale for high school students.

Knittel (1963) obtained a reversal of the above findings in the sample of nine Ss who had a disabled sibling. With this sample, senior high school students had higher ATDP-O scores than junior high school students. Knittel found the same reversal when he used Szuhay's Children's

Picture Sociometric Attitude Scale to measure the attitudes toward disability at younger grade levels. Intermediate grades were found to be more accepting than primary grades for the sample with the disabled sibling (N = 27). For the sample without a disabled sibling or friend (N = 27), the intermediate grades were less accepting than the primary grades. The differences for both samples though not given are reported as significant at the .05 level.

In contrast with Knittel's findings with the non-disabled sample, Szuhay (1961), using the CPSAS, reported that fourth and sixth graders both had more favorable attitudes than kindergarten children with a sample of 144 children, 36 in each grade. The differences were significant at the .05 level, (t's not given), although Szuhay did not control for the contact variable as Knittel had. Knittel states that his findings suggest that the younger non-disabled siblings of disabled children may be more resentful of the attention the latter receive than are older siblings. This could account for the reversal of his finding with children who have no personal involvement with the disabled; that higher grade levels tend to be related to less favorable attitudes. Since Szuhay's findings are not consistent with this proposal, further study is necessary to define the relationship of grade level to attitudes in the elementary grades.

Two studies have used measures other than the ATDP to compare different grade levels. Auvenshine (1962), using his Attitudes Towards Severely Disabled College Students scale with a sample of 316 college students, found that freshmen and sophomore males (N = 16) were less accepting than juniors, seniors (N = 61), and graduate students (N = 82), ($F = 3.99$ between groups, $p < .05$ level). However, no significant difference was found between females at these grade levels. Horowitz, Rees, and Horowitz (1965) obtained a similar but more clear-cut trend using a simple scored scale to measure realistic-unrealistic attitudes towards the deaf. Older grade levels rated the deaf on personal and achievement characteristics more realistically and knowledgeably when three grade levels of 20 Ss each were compared. The differences between sixth graders and high school students were not significant but both sixth graders and high school students differed significantly from college students at the .05 level or beyond (ts not given). Graduate students (N = 20) had lower scores than undergraduates, but the difference was not significant. The results of these two studies are the reverse of the trend found in the Lamer (1965) study using the ATDP-B, but his findings were not statistically supported as were those of Auvenshine and Horowitz et al.

In conclusion, most of the studies seem to indicate that the present grade level of students is related to their attitudes toward the disabled, but, as with age, the direction of the difference depends on other factors. A tentative hypothesis is suggested for further investigation; that attitudes toward disabled students are less favorable with increasing grade level through the elementary grades, but that the trend reverses at the high school and college level so that increasing grade levels are related to more favorable attitudes. This hypothesis ignores the factor of contact with disabled persons.

Once education has been completed, there is only a small amount of evidence of the relationship between attitudes towards disabled persons and the level of education of adults. Two studies have used the ATDP to investigate this variable. Table 18 shows that two investigators found no significant (chi square) differences between dichotomized educational levels and ATDP scores (Tutaj, 1964 and Bell, 1962).

However, results obtained by three investigators using other measures of attitudes would support an hypothesis that Ss with higher levels of formal education have more accepting attitudes, although the statistical data were not available to the present authors. Roeher (1959), using a Likert scale of attitudes toward the disabled similar to the ATDP, found that individuals whose occupations demanded higher levels of education were significantly more accepting than those whose occupations demanded lower levels of education on a sample of over 300 Canadian adults. Lukoff and Whiteman (1963), using the Attitudes to Blindness Scale, reported that level of education has correlated positively with positive attitudes on the subscale index measuring attitudes

toward the integration of blind people in sighted activities and settings. Apparently, however, no significant correlation was found between educational level and the other indices of the Attitudes to Blindness Scale. Simmons (1949), using a questionnaire on opinions about blindness, also found that persons with higher educational levels exhibited more favorable attitudes than those with lower educational levels.

The data using disabled subjects are also not consistent. Table 18 shows that three studies found no relationship between completed level of education and ATDP scores for disabled subjects. The original monograph (Yuker, Block & Campbell, 1960) reported no significant differences (chi square) between dichotomized ATDP scores and elementary, high school, and college education. Human Resources (1964) data indicated no significant correlations between scores on ATDP-A or B and years of education.

In contrast, two studies reported a significant relationship between ATDP scores and level of formal education of disabled persons. Wada (1964) found a significant positive relationship at the .05 level. However, the range of educational levels covered and statistical procedures were not included in his report. Human Resources (1964) found a correlation of +.18 significant at the .01 level between ATDP-O and years of education.

Tutaj (1964) reported another finding which relates to education but not grade level. He found no significant difference (chi square) between ATDP-O scores dichotomized at the mean and high school grades dichotomized at above and below an 85 average.

In general, it appears that some relationship may exist between completed educational level and attitudes toward the disabled of non-disabled and disabled Ss. In all cases where a significant relationship has been found, increasing educational levels are related to increased acceptance of the disabled.

Socio-Economic Status

Little information has been obtained pertaining to the relationship of socio-economic factors and attitudes toward the disabled. One study by Felty (1965) related income to a modification of the ATDP-O with a sample of 267 non-disabled Costa Rican males and females. Felty found a positive partial correlation of +.14 between the income of persons in low income, education, business, and professional occupations and the modified ATDP scores, significant at the .05 level. The multiple correlation was based on the eight variables of Income, Needs for Benevolence, Leadership and Conformity as measured by the Gordon Survey of Interpersonal Values, Intensity of feelings about attitudes toward the disabled, Satisfaction with health facilities in Costa Rica, Frequency of contact, and Satisfaction with the government. The multiple R of +.23 accounted for about 51 percent of the total variance of the ATDP scores. He used a scoring modification based on Guttman methods, which is not directly comparable to ATDP scoring. Gowman (1957) used a questionnaire of statements about the blind and found that lower class high school students (N = 51) tended to portray the blind with more stress on limitations and stereotypical concepts than middle class high school students (N = 53). A number of investigators have found a negative relationship between socio-economic status indicators such as income or years of education and prejudice as measured by the California F Scale (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950), e.g., Frenkel-Brunswik, MacKinnon and Centers, Hyman and Sheatsley as reviewed in Brown (1965), and Winder as reviewed in French (1956). Since the ATDP measures a specific type of prejudice, further investigation may confirm a significant relationship. The statistical significance of this difference was not stated. Further investigation may confirm a significant relationship between socio-economic status factors and attitudes towards the disabled.

One study, Yuker, Block, and Campbell (1962) reported the relationship of property ownership and ATDP-O scores for a disabled sample of 245 Abilities employees. It was found that

persons with high ATDP-O scores were less apt to own houses or cars than persons with low ATDP-O scores. However, a chi square value of 2.95 was not significant. Further studies are necessary to clarify the relationship, if any, for disabled persons between socio-economic status indices and attitudes towards the disabled.

Disability Variables

Predictions were made concerning the relationship between ATDP scores and type or severity of disability. The specific disability variables that were measured included: nature of disability, extent of disability and the age at which the person was disabled. It was predicted that none of these factors would be related to ATDP scores. Although these predictions are contrary to the opinions of some persons working with the disabled, they are all based upon the same theoretical considerations. The basic assumption is that the reaction of a person to his disability is primarily a function of internalized personality and self-concept factors, and only secondarily a function of the precise nature and extent of the disability. In other words, the crucial determinant of a disabled person's attitudes (both towards himself and toward other disabled persons) is his perception of his disability, not the "objective" nature of the disability. Two persons who might appear "objectively" to have the same type and severity of disability might percieve themselves quite differently, and consequently might have quite different attitudes. Thus, in this context, the concept of "objective" evaluation of disability appears to have little meaningfulness.

Nature and extent of disability. A number of studies have reported on the relationship between ATDP scores and disability variables. Table 19 shows the data relating to the variables of nature and extent of disability. Some results were reported in the original monograph (Yuker, Block & Campbell, 1960). Four samples totaling 436 Ss were utilized in making comparisons between cardio-vascular versus pulmonary versus arthritic disabilities; between neurological versus non-neurological disabilities; between sensory versus non-sensory disabilities; and between upper-body versus lower-body involvement. The chi square analysis yielded values ranging from .00 to .91 (all non-significant). Thus, no significant relationship was discovered between mean ATDP-O scores and nature of disability.

Similarly, when extent of disability was investigated, three samples totaling 375 employees of Abilities, Inc. were used. One set of comparisons was made using the number of extremities involved and another set investigated the relationship between ATDP scores and varying number of disabilities in each individual. No significant differences were found (chi square values ranged from .06 to .20), indicating that these variables are not related to attitudes toward disability. It was concluded that both the nature and extent of disability were unrelated to attitudes.

A more complete discussion of disability variables was provided in a report by Yuker, Block and Campbell (1962). The factors studied included such demographic variables as sex, marital status, property ownership, education, etc. and such attitudinal variables as attitudes toward disabled persons, anxiety, authoritarianism, intelligence, etc. In this study it was concluded that for the sample of Abilities workers used, there were no significant relationships between measures of the nature of disability or extent of disability and any of the demographic or behaviorial variables studied.

An extensive investigation was conducted at Human Resources (1964) to confirm the above findings. Fourteen factors were studied under the headings of nature and extent of disability. Ratings were made by the company nurse using medical records and her personal knowledge of the employees. Here, too, Ss were Abilities, Inc. employees. The findings indicate that although occasional statistical significance in the relationship between disability type and degree was found when a large number of statistical comparisons was made, in general no overall meaningful differences were found. For example, no significant differences were revealed

between any of the three forms of the ATDP and the variable of extent of medication. The same findings held for respiratory versus non-respiratory disability, neurological versus non-neurological disability, and for number of disabilities each employee manifested (zero, one, two, or three).

The infrequently significant results were reflected in such findings as a significantly higher score for the heart condition versus the non-heart condition disability groups on ATDP-O (.05 level). No significant differences were found for these factors on forms ATDP-A or B. In comparing five categories of the variable "subject to attack," only four of 30 t tests were significant (one at .01; three at .05). In comparing five categories of auditory disability, ranging from normal hearing to deaf, significance was reached only twice ($p < .05$). Occasional significant results were found in studying the variables of structural and functional impairment of hands (four categories in each sample) and locomotor and visual disabilities. On the other hand, when four categories of speech handicap were analyzed, one group, "some defect" was significantly higher in ATDP score than all other groups seven times (six times at .01; once at .05).

Finally, comparisons were made between five categories of degree of visibility and esthetic judgment of disability (pleasant or unpleasant) and ATDP scores. Significance was discovered infrequently and scattered in no apparent meaningful order.

It is unfortunate that the results of these investigations cannot be considered conclusive because of the frequently arbitrary categorizations, such as the label "hard to detect-unpleasant," in reference to visibility of disability, and the great variations in number of Ss per category. For example, referring to the variable "functional impairment of hands," there were 252 Ss with no impairment and four with "complete impairment - one hand." Furthermore, with a sample of 307 Ss, even low t values may be significant merely as a statistical artifact and, therefore, may lack meaningfulness. The same Ss were used in all 14 comparisons which limited the independence of samples. Finally, in some of the comparisons, some non-disabled Ss, were included. All these factors limit the meaningfulness, and generalizability of these results.

A study by Wada (1964), which used 132 employees at an industrial workshop, indicated that a significant relationship exists between attitudes toward disability as reflected by ATDP-B scores, and nature of disability. The findings reported a significant relationship between sensory versus neurological disorders and between sensory versus all other disorders. In each case the significantly higher scores were obtained by the non-sensorily disabled. It is difficult to determine the meaningfulness of these findings since no data or statistics were furnished, nor is it clear what sample was used or how it was selected.

Three studies have reported on the relationship between attitude and extent of disability using scales other than the ATDP. Two of these investigations reported results similar to those of the Human Resources studies. Braen and Weiner (1965) did not find any significant differences between moderately and severely disabled groups in terms of acceptance of disability using two different instruments. The Ss were 26 orthopedically handicapped adolescents and the instruments referred to were the Fielding Story Completion Test and a questionnaire developed by the investigators for their study and designed to assess degree of acceptance of disability and attitudes toward self and others.

A study by Larkin (1962), of 235 blind adolescents, indicated that extent of blindness is not influential in determining Ss attitudes. Larkin developed a 13-item rating scale designed to measure adjustment to blindness which is, in effect, an attitude measure. No statistics or data were furnished in this report.

Finally, in an investigation using the Emotional Factors Inventory, Bauman (1954) found that those without useful vision appeared slightly better adjusted to blindness than those with some useful vision. No statistical significance was given. However, when Bauman's data were analyzed at Human Resources, no significant differences were discovered between mean scores on the Attitudes re Blindness subscale of the EFI for two of her three groups, when they were dichotomized in terms of absolute blindness or light perceptions (and/or projection) only, and varying degrees of visual acuity.

Although a significant difference in attitude was related to severity of disability in one of Bauman's samples, and the argument has been forwarded that those who are more severely disabled are more favorable in attitude toward disability than those who are less severely disabled, the bulk of the evidence indicates that there is no significant relationship between nature and extent of disability and attitude. Thus, it seems that the statement made in the original monograph concerning nature and extent of disability and their relationship to attitudes toward disability is valid. That is, "... Many variables relating to disability were found to be unrelated to ATDP scores .... (included are) type of disability, extent of disability... (etc.)" (Yuker, Block & Campbell, 1960, p. 6). This finding was confirmed in 1962 and 1964 studies of employees of Abilities, Inc. However, some of the characteristics of Abilities employees "... may or may not be characteristic of disabled persons in general..." (Yuker, Block & Campbell, 1960, p. 6).

It should be noted that the above results pertain only to the relationship between ATDP scores and the respondent's own disability. They should not be interpreted with regard to acceptance of persons with specific types of disability. In our earlier discussion we noted that the staff at Human Resources believed it was important to construct a general measure of attitude toward the disabled, since many of the earlier studies used specialized measures of attitudes toward persons with specific disabilities. A number of investigators such as Siller (1963) and Maglione (1965) have reported that acceptance or rejection of the disabled is related to type of disability, with many persons finding persons with certain disabilities more acceptable than others. At Human Resources we have obtained no data relating to the above since we are primarily interested in attitudes toward all disabled persons. Nevertheless, the findings of others pertaining to differential attitudes toward different types of disabled persons are discussed in Chapter 6.

Age at onset of disability. The literature dealing with factors associated with physical disability frequently makes reference to the significance of the age at which a person becomes disabled. It is often assumed that there are important differences between persons who are congenitally disabled and those who acquire disabilities. It is also frequently assumed that there are differences between persons who become disabled when they are relatively young as compared with those who become disabled later in life. Table 20 shows the data relating to age of onset of disability. In a series of studies conducted with the physically disabled employees at Abilities, Inc., it has been found that there are no significant relationships between ATDP scores and the age at which the persons become disabled. No significant differences have been found between congenitally disabled persons and those who acquire disabilities. Similarly, no significant differences have been found between persons who were disabled when they were children and those persons who became disabled as adults. These results are contrary to the general assumptions of the literature.

Two studies, conducted at Human Resources, have a bearing on this problem. In the 1960 monograph by Yuker, Block and Campbell no significant relationship was discovered between attitude and age at which disabled. The chi square value obtained was 1.70; the 209 Ss were Abilities, Inc. employees. Similarly, for the three samples used no significant correlation was found between age at onset of disability and the three forms of the ATDP. The correlation coefficients ranged from -.12 to +.12. The samples, although comprised primarily of Abilities employees, contained approximately one-fifth non-disabled subjects (Human Resources, 1964).

Wada (1964) also investigated the relationship between age at onset of disability and attitude of 132 disabled workers using the ATDP-B. No data were provided with Wada's study, although it was concluded that a significant relationship exists between attitude and acquired versus congenital disability ($p < .05$). Greater acceptance was associated with acquired disability.

On the other hand, Arnholter's study (1963) of 79 workers at Indianapolis Goodwill Industries revealed no significant difference in mean ATDP-O score between workers whose disabilities were acquired and those whose disabilities were congenital.

Two studies relevant to the variable of age of onset are those by Larkin (1962) and Bauman (1954). Each of these investigators used blind Ss. No data or statistics were provided by Larkin, who inferred that age of onset is unrelated to the attitudes of the 235 blind adolescent Ss. Conversely, Bauman discovered a significant difference (t significant at .01) in attitude between those with long standing versus recent loss of vision. Bauman's attitude measure was the Attitudes re Blindness sub-scale of the Emotional Factors Inventory which she developed. It would seem from Bauman's study that the relationship between recency of loss of vision versus long-standing loss and attitude is a function of age at onset. Although no data were provided, the earlier the onset, the more favorable the attitude (68 of the 314 Ss were disabled before age 17).

The results presented above, although somewhat contradictory, lead us to believe that general attitude toward disability is unrelated to age at onset of disability. The studies discussed are not directly comparable in terms of design, statistical treatment and subject characteristics. However, the evidence favors the interpretation of no relationship. This conclusion must be offered as tentative at this point, at least until research providing more conclusive results is undertaken. This is particularly true for the studies conducted at Human Resources where all of the subjects are gainfully employed full time. Such persons probably constitute an unusual subgroup of disabled persons, in general, and may have characteristics which are sufficiently potent in their influence upon their attitudes toward disability to largely obscure the influence of other characteristics.

Conclusions

The data cited in this chapter represent a compilation of materials from many sources dealing with many demographic variables. The relationships between attitudes toward disabled persons and each of these variables have been explored in some detail. In analyzing the relationships between each of these variables and ATDP scores, in no case has the relationship been a simple one. Studies have been cited in which no significant relationship has been found between a given variable and attitudes toward the disabled and, conversely, other studies of the same variable(s) are cited where the relationship does reach statistical significance. While each set of relationships has been summarized earlier in this chapter, the authors believe that it is necessary at this point to draw some tentative conclusions based on the data reported. While this is a difficult and complex task, there are certain broad assumptions that the authors feel are legitimate that will assist in drawing preliminary conclusions. The first of these is less an assumption than an observation. As mentioned above, there are a number of studies which yield contradictory results about the relationship between attitudes toward the disabled and given variables. On the one hand, no significant relationship is found and on the other, a significant relationship is discovered for the same variable. In reviewing the significant relationships, however, it was extremely rare to find two studies dealing with the same demographic variable where one significant finding suggested a positive relationship with attitudes toward the disabled while the other suggested a negative relationship. Thus, in reviewing all of the studies it can be said that when some studies found no significant relationship and others found a significant relationship, almost all the significant findings were in the same direction. As a result, where there are a substantial number of studies supporting a relationship in a particular direction, the authors will tentatively conclude

that this relationship is a relatively reliable one. The tendency to make such a decision, however, will be based on the second assumption which is implicit throughout this monograph. That is, that it is possible to make certain general predictions on the basis of contemporary psychological theory. When studies report statistically significant findings in a direction consistent with general theory, the present authors will tend to conclude that this relationship is a meaningful one, since it is explicitly assumed that in the field of psychology, in general, criteria measures tend to be weak in sensitivity and tend further to favor the probability of obtaining nonsignificant as compared with statistically significant results.

Briefly then, the present authors have come to the following conclusions with regard to the relationship between demographic variables and attitudes toward the disabled. One, for both non-disabled and disabled adults there is no relationship between age and acceptance of physical disability. Those studies which have suggested statistically significant relationships have tended to use extremely large samples and found correlational values small enough to account for only a fraction of the total variance. In addition, as noted, at many points in this chapter, the age variable is frequently contaminated with educational level. Two, with respect to educational level in general, the relationship seems to be such that there is an increase in acceptance of physical disability on the part of both disabled and non-disabled persons with increasing levels of completed formal education. However, the relationship appears to be curvilinear for Ss who have not completed their education. In other words, attitudes toward the disabled tend to be less favorable with increasing grade level through the elementary grades, but the trend appears to reverse at the high school and college level, so that the relationship becomes consistent with the relationship found with adult Ss. Three, sex differences seem to be found sufficiently often to conclude that females show greater acceptance of physical disability than do males in both disabled and non-disabled populations. Four, measures of both degree and type of physical disability as well as the age at which the S became disabled seemed to be unrelated to measures of acceptance of physical disability. Five, there is generally insufficient data to draw conclusions between the relationships of attitudes toward disability and the subject's marital status, his socio-economic status, nationality and race and whether S lives in an urban or rural environment.

Chapter 5

PERSONALITY CORRELATES OF ATTITUDES TOWARD DISABLED PERSONS

The presentation format used in Chapter 4 will be repeated in the present chapter which focuses on the relationships between attitudes toward disabled persons and a variety of personality factors. Among the factors which have been investigated are motivation, interests, self-concept, anxiety and intelligence. A separate section will be devoted to each of these variables.

In each section we shall discuss separately those studies which have used disabled subjects and those which have used non-disabled subjects. It appears reasonable to predict that one would find relationships between attitudes and personality factors among groups of disabled persons. That is, it is often assumed that disabled persons who are accepting of their disability have different personality attributes from disabled persons who reject their disability. This assumption is made throughout the literature; and even though studies of personality and self-concept of the disabled have suggested this hypothesis, it has seldom been empirically verified.

When one turns to the question of the relationship between attitudes and personality correlates in non-disabled persons, it is more difficult to predict relationships on the basis of current theory. There have been comparatively few studies reported which have attempted to relate personality variables in non-disabled persons to their attitudes toward the disabled (Siller, 1965). Siller and Chipman (1965) have cited a few such studies and point out that while most have methodological limitations, most of them have found some significant relationship.

Motivation

It would seem reasonable that the attitudes of both non-disabled and disabled persons toward the disabled are related to motivational factors although it is obvious that some motives may be more clearly related to attitudes toward disability than others. It also seems reasonable that the motivational factors relating to attitudes toward the disabled may be different for disabled as compared with non-disabled persons. Several motivational variables have been studied by investigators using the ATDP at Human Resources as well as at other institutions. The motives studied have, for the most part, been based on Murray's discussion of psychogenic needs (Murray, 1938). The three instruments most frequently used have been Gough's Adjective Check List (Gough & Heilbrun, 1965 and Heilbrun, 1958 and 1959), the Edwards Personal Preference Schedule (Edwards, 1959) and McClelland's adaptation of the Thematic Apperception Test (McClelland, Atkinson, Clark & Lowell, 1949).

Even though they are all based on Murray's definitions, there is some question as to the comparability of needs as measured by these three instruments. According to Heilbrun (1958 and 1959), who developed the adjective scales on Gough's Adjective Check List (ACL) to reflect Murray's 15 needs, there is a rank order correlation of +.60 (Spearman Rho), significant at the .05 level, between " ... mean need scores on the ACL-real (need scale) and those obtained on the Edwards' PPS" (1958, p. 286). However, with "personal desirability" partialled out, the correlation between the ACL and EPPS scores dropped to +.35, which is not significant. This seems to indicate that both scales may reflect a need for approval in addition to whatever other need each

subscale may measure. However, comparison of mean scores on the combined subscales of the ACL with combined subscales on the EPPS would not reveal any meaningful information concerning how well the individual need subscales compare on the two tests. In addition, some of the subscale needs have definitely been found to differ on different scales. There are a number of studies indicating that phantasy achievement score on the McClelland TAT is not measuring the same factor as need achievement on the EPPS (Melikian, 1958; Marlowe, 1959; Dilworth, 1958; Himelstein, Eschenbach & Carp, 1958).

Of the motives that have been studied, only two appear to be significantly related to attitudes toward disabled persons. The need for aggression seems to be negatively correlated with attitudes toward the disabled while the need for intraception appears to be positively correlated with attitudes toward the disabled.

Aggression. One might hypothesize that there would be a negative correlation between the aggressive tendencies of non-disabled persons and accepting attitudes toward the disabled. It could also be hypothesized that there would be a negative correlation between disabled persons' aggressive and hostile feelings and their attitudes toward other disabled persons. The first of these hypotheses has been tested in seven correlational studies between the ATDP and various measures of aggression or hostility using non-disabled adolescent and adult samples (see Table 21[1]). There appear to be no studies relating these needs to attitudes toward disability as determined by the use of measures other than the ATDP. Of the seven correlations with the ATDP, one resulted from using Form B of the ATDP while the others resulted from the use of the ATDP original form. Of these, three were significantly correlated in the predicted direction, (i.e. high ATDP scores were negatively correlated with high aggression or hostility scores), as measured by the Gough ACL (Siller, 1964), Zaks-Walters Scale of Aggression (Siller, 1964) and Swingle's (1962) measure of somatotonic traits as defined by Sheldon (aggressive, love of action and power, bodily assertive). In addition, one correlation approached significance at the .05 level in the expected negative direction (Siller, 1964), using the Zaks-Walters scale of aggression with a sample of somewhat older subjects. Three of the correlations were non-significant (Siller & Chipman, 1965; Human Resources, 1962); however, all correlations were in the predicted direction.

Two tests for significant differences between high and low extremes of ATDP-O scores and aggression or hostility scores have been conducted (see Table 21). In both $\bar{t}$ tests, persons with high ATDP scores measured significantly lower on aggression and hostility than those with low ATDP scores (Siller & Sternlicht, 1960).

Siller and Chipman believe that the non-significant findings of their 1965 study do not disprove the hypothesis of a negative correlation between aggression and acceptance of the disabled, which was suggested by the results of their 1960 and 1964 studies. The 1965 studies used projective measures of aggression, Elizur's (1949) Rorschach Hostility Scale and Mussen's and Naylor's (1954) TAT Aggression Index, rather than objective measures. These different findings could indicate that projective measure reflect something different from the objective measures of aggression or that they are inappropriate for comparing normative findings.

An evaluation of the evidence cited suggests that there is support for the hypothesis that aggressive and hostile feelings, as measured by objective self-report measures, are related to negative or non-accepting attitudes towards the disabled.

With regard to disabled subjects, three correlations were performed in a study at Human Resources between the three forms of the ATDP and need for aggression as measured by the Gough ACL (see Table 21). Forms A and B of the ATDP were both significantly negatively

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[1] All Tables are found in Appendix B.

correlated with need for aggression ($p < .05$). Form O showed no significant correlation with this variable but the obtained correlation was in the expected negative direction. This limited evidence tends to support the hypothesis that hostile and aggressive feelings in the disabled are related to non-acceptance of other disabled persons.

Intraception. The only need which was found to correlate positively with ATDP scores was intraception. The need for intraception reflects rating oneself as insightful with regard to self and others. This need implies a desire for understanding of others which might well be requisite to certain kinds of positive attitudes toward disabled persons. Two studies found significant positive correlations between ATDP Forms O and B and intraception as measured by Gough's ACL and Edwards' PPS (Siller, 1964 and Human Resources, 1962). The Siller study reported a correlation of +.13 ($p < .05$) between ATDP-O and need for intraception on the ACL using a sample of 283 college students. At Human Resources it was found that ATDP-B correlated +.25 ($p < .05$) with need for intraception on EPPS with a sample of 66 college students.

Nurturance, affiliation, and affect. A number of motivational variables have produced conflicting correlational results when related to the ATDP. Table 22 shows the findings for the variables of nurturance, affiliation and affect. Siller (1964) found a significant correlation of +.22 between ATDP-O scores and the Gough ACL need for nurturance measure. On the other hand, a Human Resources study (1962) found a non-significant correlation of +.01 between ATDP-B and the EPPS measure of need for nurturance (need to nurture or to help others). In addition, Felty (1965) found no significant correlation ($r = +.06$) between his Guttman modification of the ATDP-O and need for benevolence (need to help others, to be generous) as measured by a subscale of the Gordon Survey of Interpersonal Values.

Siller (1964) reported a significant positive correlation of +.18 between ATDP-O and need for affiliation on the Gough ACL, while Human Resources (1962) found a non-significant correlation of +.11 between ATDP-B and the EPPS need for affiliation measure. While Siller's correlation coefficient of +.18 is significant at the .05 level, it accounts for only 3.2 percent of the variance between need for affiliation and attitudes toward the physically disabled. Further, he used a sample of 283 Ss, thus increasing the likelihood of obtaining statistical significance even with a low correlation. The point is that while this coefficient is significant, the interpretation of its meaningfulness must be made with caution. This conclusion may be emphasized by the correlation of +.11 obtained at Human Resources, which is in the same direction as Siller's and which indicates the small degree of relationship between these variables. In addition, Swingle (1962) obtained a non-significant r of +.02 between ATDP-O and a scale measuring viscerotonic traits as defined by Sheldon (conviviality, need for affection and for social support). A Human Resources study (1964) using a sample of disabled Abilities employees found a significant positive correlation of +.15 between the Gough ACL need for affiliation measure and scores on the ATDP-A but found non-significant correlations of +.10 and +.05 between ATDP-O and B with need for affiliation (see Table 22).

According to Edwards (1959), the need for nurturance and the need for affiliation are correlated +.46 on the EPPS. However, the different findings of Siller and Human Resources indicate that need to nurture and need for affiliation as measured by the EPPS and the Gough ACL are not measuring the same factor. The definitions of viscerotonic traits and the need for affiliation appear to be related although no evidence is available.

The six correlations performed with data from non-disabled samples and the three correlations performed with data from the disabled sample are not sufficiently comparable to make any conclusive statements about the relationships of needs for nurturance and affiliation with acceptance of the disabled. Although it might be expected that a need to nurture would be related to positive attitudes toward the disabled, it should be remembered that need to nurture might be related to unrealistic pitying and positive stereotypical attitudes as well as realistic acceptance of the disabled as individuals, which is what is positively scored on the ATDP.

The results relating to the variable of affect and attitudes toward the disabled are also unclear (see Table 22). Siller and Sternlicht (1960) found that ATDP-O scores were significantly correlated with Cervin's Rigidity and Emotional Responsiveness Scale; the correlational value was not reported but the authors note that it was significant at the . 02 level. Siller and Chipman (1965) found that ATDP-O scores were not significantly correlated with interviewer ratings of "affective investment," which they rated as "bland-intellectual," "intermediate," or "intense-emotional." A correlation of -. 04 was found with a sample of 65 adults and late adolescents who were selected on the basis of their tendency toward adversive attitudes toward the disabled. Swingle (1962) also found a non-significant correlation of -. 14 between ATDP-O and cerebrotonic traits as defined by Sheldon (restraint, inhibition, hyperattention, avoidance of stimulation), with a sample of 75 male college students. Meaningful comparisons cannot be made between these studies due to the limited samples used, as well as basic differences in measures of affect and emotional response or restraint.

A quite different measure of affect was used in a study by Kaiser and Moosbruker (1960). They found that persons with low ATDP-O scores reacted more emotionally, as measured by GSR response, to photos of visibly disabled persons than did high scorers ($p < .001$), even though their GSR base scores were not significantly different before exposure to the pictures of disabled persons.

Achievement and other needs. A number of motivational variables have been found in the main to be unrelated to attitudes toward the disabled. Seven correlational studies have been conducted to investigate the relationship between a measure of need for achievement and some of the ATDP forms (see Table 23). Three of the studies were conducted with non-disabled samples; and four were with disabled samples. Of the seven, only one correlation was significant. The ATDP-A was significantly correlated with need for achievement on the Gough ACL with a sample of disabled employees (Human Resources, 1964). As Table 23 shows, the ATDP-O is not significantly correlated with need for achievement as measured by the Gordon Survey of Values, McClelland's TAT or the Gough Adjective Checklist. The ATDP-B was not significantly correlated with achievement scales on the Gough ACL or Edwards' PPS.

Since only one of the four correlations based on the disabled samples was significant, this occurrence may be due to chance. Nevertheless, Block (1962) has found that disabled Ss high in both need for achievement on McClelland's TAT and acceptance of disability, as measured by their attitudes toward other disabled persons on ATDP-O, are significantly higher in actual achievement as indicated by industrial performance (see Chapter 7, Work Performance section for complete description). It is possible that need for achievement and attitude toward one's own disability, while not significantly related, both contribute toward actual achievement.

Of ten studies relating the needs of dominance, deference, and succorance or dependency to attitudes toward the disabled, using either disabled or non-disabled samples, only two correlations have been significant (see Table 24). Felty (1965) found a significant partial correlation of +. 13 between the need for dominance as measured by the Leadership Scale of Gordon's Survey of Interpersonal Value and the ATDP with a sample of 267 Ss, while the two studies which measured need for dominance on the EPPS and Gough's Adjective Check List were not significant. According to Felty the Leadership Scale measures need for dominance and power, but the correlations between this scale and the EPPS and Gough's ACL are not known. In addition, although the partial correlation was significant, it is so low that the multiple correlation ($R = +.23$), including this partial correlation and seven other variables, accounted for only about 5 percent of the total variance of ATDP scores (see Chapter 4, Socio-Economic Status section for a description of the other variables in the multiple R). The only study on need for deference was conducted by Human Resources (1962) using the EPPS with a non-disabled sample; the correlation was not significant in this case. Three studies were conducted investigating need for succorance using either the EPPS or Gough's ACL. Two of these were with non-disabled samples (Human Resources, 1962 and Siller, 1964) and the third used a disabled sample (Human Resources, 1964). Of the five

correlations between succorance and the ATDP, only one was significant. One study investigated the relationship between ATDP-O scores and dependency, as measured by the Kagan and Mussen Dependency Index with non-disabled subjects (Siller & Chipman, 1965). The correlation was not significant. Dependency appears to reflect a similar construct to succorance although no correlational evidence exists. Evidence pertaining to the needs of dominance, deference, and succorance or dependency, although quite limited in scope, indicates that there is little or no relationship between these needs and attitudes toward the disabled.

Finally, no significant correlations have been found between the ATDP and the variables of need for endurance, order, change, heterosexuality, autonomy, or exhibition, for either disabled or non-disabled samples. The relationships between these variables and the needs tested above are summarized in Table 25.

In summary, it appears that the only needs which may prove to have a clear relationship to attitudes toward the disabled are aggression and intraception. Existing evidence suggests that the needs for aggressive and hostile expression are related to negative attitudes toward the disabled, at least as measured by the ATDP. Since significant relationships were found only in studies using self-report instruments, as opposed to projective measures of aggression, it may be that negative attitudes expressed through the ATDP are related only to the more overt expressions of aggressiveness; i.e., to the person who describes himself in aggressive terms on a self-report. The more covert expressions of aggression through projective devices cannot be clearly related to attitudes toward the disabled as expressed through the ATDP. It must also be recognized that some common response set may account for the results. However, this seems less plausible when one considers the general failure to find consistent statistically significant relationships between attitudes toward the disabled and self-report measures of other needs.

The evidence on intraception, though limited, suggests that persons who see themselves as insightful would be predisposed to empathetic and understanding attitudes which would account for a low correlation with positive attitudes toward disabled persons.

Interests

Three studies have been reported in which ATDP scores were correlated with measures of interest. In two of these studies the measure of interest used was the Allport-Vernon Study of Values. Coggin (1964) reported no significant correlations between ATDP scores and scores on this scale. Wilson (1963) administered both the ATDP and the Allport-Vernon Study of Values to three samples. Of 18 correlations that were computed with the six subscales of the Allport-Vernon measure only two were found to be significant. Wilson found a significant negative correlation ($r = -.34$, $p < .05$) between ATDP-O and scores on the theoretical scale, and a significant negative correlation ($r = -.434$, $p < .01$) between ATDP-O scores and scores on the economic scale. Finally, Fischbein (1964) correlated ATDP scores and questionnaire items relating to vocational interests, but failed to obtain any significant relationship. In view of this data, the tentative conclusion is forwarded that there does not seem to be significant relationship between ATDP scores and measures of interest when non-disabled subjects are studied.

Self-Concept

Several studies related ATDP scores to measures of the self-concept of non-disabled individuals (see Table 26). Eisler (1964) developed a Semantic Differential Rating Scale for assessing stability of self-concept in which Ss rate themselves, first at their best and then at their worst. He correlated this scale with ATDP-O scores in a sample of 88 college students. A correlation of -.19 (.05 level) was obtained, indicating that persons with stable self-concepts tended to be more accepting of physically disabled persons. An earlier study at Human Resources

(1962) correlated the ATDP with approximately the same Semantic Differnetial (SMD) used in the Eisler study. The sample consisted of 81 college students. A correlation of +. 27 was obtained ($p < .05$), and it was concluded in this study that persons with favorable attitudes toward the disabled were more likely to have a positive self-concept.

A number of other studies have been conducted which correlated ATDP scores with measures that could be considered to be related to self-concept. Siller (1964), using large samples of college, high school and junior high school students, correlated the ATDP with a number of personality measures. These are presented in Table 26. He found low but significant positive relationships (. 05 level) between ATDP-O scores and Barron's measure of ego strength in samples of college, high school and junior high students. Similar results were reported by Siller and Sternlicht (1960). They found that when subjects were ranked according to ATDP scores, those in the top 25 percent were significantly higher on Barron's measure of ego strength than those in the bottom 25 percent ($p < .02$, t not given). In the 1964 study, Siller reported two non-significant correlations between ATDP-O scores and measures of self-acceptance (+. 08 and -. 01) and a significant negative correlation between ATDP scores and a measure of self-criticism (significant beyond . 05).

ATDP-O scores have been correlated with scores on Maslow's Security-Insecurity Inventory for three samples. Siller (1964) using a modified version of the Inventory, reported no relationship in a sample of senior high school students ($r = +.02$), and a significant negative relationship ($r = -.17$) in a sample of college students. Tutaj (1964) also reported a significant negative correlation of -. 40 for a small sample of high school girls ($N = 30$). The negative correlations are in the expected direction since high score on the S-I Inventory reflects insecurity which, in the present authors' view, is likely to be negatively related with acceptance of the disabled.

Siller and Chipman (1965) correlated ATDP-O scores with permeability of ego boundaries, as measured by Rorschach. They obtained a significant correlation of -. 28, but the correlation between ATDP-O scores and the impermeability of ego boundaries was a non-significant + . 05. In a Human Resources study (1962) it was found that the ATDP-B was not significantly related to the need for abasement as measured by the EPPS. Siller and Sternlicht (1960) related ATDP-O scores to scores on Luft's Psychological Control Questionnaire. Complete data were not included, but they report that Luft's Questionnaire discriminated significantly between high and low ATDP scorers.

Several studies have been performed which attempt to relate measures of attitudes toward the disabled other than the ATDP to measures of self-concept. Steingisser (1954) studied the effects of differential information about blindness upon individuals whose concepts of self ranged from favorable to unfavorable. Self-concept was measured by the Jervis Q-sort adjustment scale while attitudes toward blindness were measured by a scale devised by Steingisser. Although no data were presented, she reported that individuals with low self-concept were found to hold more unfavorable attitudes toward blindness.

Epstein and Shontz (1961) studied the relationship between a non-disabled person's attitude toward his own body and his approach-avoidance attitudes toward persons with physical disabilities. They correlated scores on their Attitude Toward Physical Disability (ATPD) test with scores on the Secord and Jourard Body-Cathexis (B-C) test which measures attitudes toward one's own body. Attitude toward one's own body may be considered to be a specific aspect of self-concept. They found that positive attitudes on the B-C test were significantly correlated (. 05 level) with approach scores on the ATPD. The exact correlation coefficient was not given.

In summary, there is substantial evidence that attitudes of non-disabled persons toward disabled persons are positively related to the personality factors of self-concept, personal adjustment, and security, although it is recognized that the measures used to tap these related factors have been diverse and that their intercorrelations are not known. Nevertheless, the

evidence suggests the hypothesis that persons who feel confident, positive, and secure in their conception of themselves in relation to others will tend to be more positive and accepting in their attitudes toward disabled persons.

Turning to studies using disabled individuals, Table 26 also shows the results of three correlations performed at Human Resources (1964), in which ATDP scores were correlated with scores on the Semantic Differential as described earlier. All three correlations were below .06 and were not significant.

Whiteman and Lukoff (1962b) using blind Ss correlated the Evaluation of Blindness subscale of the Attitudes to Blindness scale (which measures the perceived frustration involved in being blind), with a self evaluation index also devised by them. This index measures the self-concept of blind Ss with respect to socially valued traits such as friendliness, courage, self-confidence and self-control. In contrast to the findings of the Human Resources study (1964) a positive relationship between the two scales was reported. However, no data were presented in the Whiteman and Lukoff paper.

It seems that the relationship between attitudes toward disability and the self-concept of disabled persons is not as readily verified as was originally assumed in the first ATDP monograph (Yuker, Block & Campbell, 1960). However, the data are too limited to confirm or deny the relationship and further investigation in this area is undoubtedly needed.

Anxiety

ATDP scores have been correlated with measures of anxiety in a number of studies. These are summarized in Table 27. As reported by Yuker, Block and Campbell (1960), a study of the employees at Abilities, Inc., which used the Weiss-Plutchik Anxiety Scale (Weiss, 1957), showed a negative relationship between anxiety and ATDP-O scores (i.e., persons with high anxiety tended to have less accepting attitudes, while those with low anxiety had more accepting attitudes). The chi square analysis performed showed results significant at the .01 level. A study by Arnholter (1963) yielded similar results. Analyzing the results obtained using Arnholter's data and a measure of anxiety developed by him, we are led to believe that the sample of disabled workers at Indianapolis Goodwill Industries (the group which scored lowest on the ATDP-O as compared to non-disabled workers in competitive industry, staff and professionals at Goodwill, etc.) also had the highest degree of anxiety.

Results obtained from samples of non-disabled Ss are similar to those using disabled Ss. Kaiser and Moosbruker (1960) reported that physically normal college students who scored more than one standard deviation below the mean on the ATDP-O showed more extreme GSR reactions to photographs of the disabled than did students scoring more than one standard deviation above the mean.

A number of other studies report the same trend. In the analysis of data resulting from the administration of the three forms of the ATDP to five samples totaling 312 non-disabled college students (Human Resources, 1962), each of six correlation coefficients obtained was negative, ranging from -.04 to -.21. None was statistically significantly different from zero. The anxiety measure used was the IPAT self analysis form developed by Cattell (1957). Two other samples yielded significant negative correlations between ATDP-O and IPAT total scores. One of these, a sample of 42 undergraduates, yielded an $r = -.53$ ($p < .01$). In the second sample of 41 students, an $r = -.35$ ($p < .05$) was found between IPAT total score and ATDP-O responses which were rescored as either negative or positive only; (i.e., the weighting of scores from +3 to -3 was disregarded). When the conventional scoring procedure was adhered to, all three IPAT scores correlated negatively but insignificantly with ATDP-O. Negative, non-significant correlations between ATDP-O and IPAT were also found in two other studies, one by Human Resources (1960) and one by Eisler (1964).

Using a sample of 65 non-disabled adults and adolescents in New York City, Siller and Chipman (1965) correlated ATDP-O scores and anxiety ratings as reflected by the Rorschach using a variation of the Elizur Anxiety Scale method of scoring, as well as a measure derived from the Thematic Apperception Test using the Schwartz Castration Anxiety Scores. Their hypothesis, that, "Anxiety, both in the generalized form and in the specific sense of castration anxiety, predisposes one towards rejecting attitudes to the disabled" (p. 3), was not supported, suggesting to them that the validity of the scales used to rate anxiety may have been doubtful.

Further confirmation of these trends is found in the results presented by Siller (1964). To test the hypothesis that anxiety acts against free acceptance of the disabled, he correlated the data obtained from three non-disabled samples on ATDP-O with two anxiety measures, the Welsh Anxiety Scale and the Zuckerman Affect Adjective Checklist. Five negative correlation coefficients were obtained; one was significant at the .01 level, three were significant at the .05 level, and one was non-significant. However, since the samples were large (all greater than 225 Ss), significant correlations may be obtained even with low correlation coefficients (the highest in this case was -.24).

Finally, one study was reported by Whiteman and Lukoff (1960b, 1962b), who observed that, "A significant relation was found between an anxiety index consisting of selected items from the Taylor Manifest Anxiety scale and the Emotional Traits of the Blind Index" (1960b, p. 8). In discussing the results of this study which used 109 non-disabled adults, they stated that, "Those sighted persons with more expressed anxiety tended to view the emotional life of blind people as more unpleasant and 'abnormal' than those of lesser degrees of expressed anxiety" (1960b, p. 8). No data or statistics were provided in their paper.

All of the studies which investigated the relationship between anxiety and attitudes have yielded negative correlations, although not all were significant. That is, persons with high anxiety, whether disabled or non-disabled, tended to be less accepting of disabled persons. However, since many of the statistics obtained were not significant, this conclusion must be viewed as somewhat tentative.

Intelligence

The present authors were reluctant to predict the nature of the relationship between intelligence and attitudes toward the disabled. Despite this, a number of investigators have attempted to relate these two variables. Apart from an interest in intelligence as a variable in its own right, it is important to know the relationship between intellectual ability and almost any psychometric instrument.

Campbell (1960) has presented some suggested additions to the American Psychological Association's technical recommendations for psychological tests. He states:

> 1. Correlation with intelligence tests. A new test, no matter what its content, should be correlated with an intelligence test of as similar format as possible (e.g., a group intelligence test for a group personality test, etc.). If correlations are reported with independent trait-appropriate or criterion measures, it should be demonstrated that the new test correlates better with these measures than does the intelligence test (p. 548).

Two studies of non-disabled persons (Knittel, 1963; Human Resources, 1964) have been reported showing no significant relationship between intelligence and attitudes toward the disabled. Knittel (1963) compared the ATDP scores for samples of high and low intelligence. The samples were arrived at by dichotomizing scores on either a Lorge-Thorndike measure of intelligence or the California Test of Mental Maturity at the median. Knittel compared the average ATDP scores of the two groups both in a sample of 18 non-disabled secondary school students

and in a matched sampled of 18 non-disabled secondary school students who had disabled siblings. No significant differences in ATDP-O scores were found between high and low IQ groups for either those with disabled siblings (t = 1.89) or those without a disabled sibling (t = .465).

Similarly, a Human Resources study (1964) of 129 non-disabled female industrial employees found a non-significant relationship (r = -.03) between ATDP-B scores and scores from Form 4 of the GT Vocabulary Test (Thorndike & Hagen, 1955).

Although no relationship was predicted between intelligence and attitudes toward disability for disabled Ss either, the original Abilities study (Yuker, Block, & Campbell, 1960) of 135 disabled workers reported that disabled workers scoring higher on the GT Vocabulary Test also scored higher on the ATDP-O. A chi square value of 12.93 was obtained, significant at the .01 level. A correlation of +.23 between intelligence and ATDP-O scores was also obtained, indicating a low but significant relationship (p < .01).

Several later studies of disabled samples reported no significant relationship between ATDP scores and intelligence. In a sample of 36 disabled workers (Human Resources, 1962) a non-significant correlation of -.03 between intelligence scores and ATDP-O scores was obtained. Rhodes and Schwartz (1965) administered the Wechsler Adult Intelligence Scale and the ATDP-O to ten patients at an epilepsy center. These results were subsequently analyzed at Human Resources using Kendall's gamma (Hays, 1963) and no significant relationship was obtained. Block (1962) correlated ATDP-O scores with the GT Vocabulary scores of 81 disabled workers and found no significant relationship (r = +.11). A 1964 study of disabled employees at Abilities, Inc. found non-significant correlations between three forms of the ATDP and vocabulary scores from Form 1 of the GT Vocabulary Test (ATDP-O, r = +.19, N = 62; ATDP-A, r = +.20, N = 60; ATDP-B, r = +.16, N = 45).

Thus, of seven ATDP studies using both non-disabled and disabled samples, only the earliest (1960) study of disabled persons at Abilities found a positive relationship between intelligence and attitudes. In this instance, the correlation was significant but quite low (+.23), accounting for a minimal proportion of variance. This suggests that the meaningfulness of the result might be questioned.

Two studies relating attitudinal measures other than the ATDP with measures of intelligence have been reported for non-disabled Ss. Whiteman and Lukoff (1962b) devised an attitude toward blindness scale which includes a subscale of "positive stereotype," i.e., the degree to which blind persons are viewed as possessing special abilities or gifts. A study using a sample of 109 adults disclosed that low intelligence was highly and positively related to attitudes of positive stereotypy, but the precise statistics were not reported.

Using the Children's Picture Sociometric Attitude Scale on a sample of 54 elementary school children, Knittel (1963) formed matched experimental and control groups according to whether Ss had a disabled sibling or not. Mean IQ scores were computed for each group using the Lorge-Thorndike Test and the California Test of Mental Maturity, and each group was then dichotomized at the mean. The disabled-sibling scores on the CPSAS were not significantly different (t = .464) for the different IQ groups. However, Knittel found a significant difference (t = 2.52, p < .05) in the control or no-disabled-sibling group scores. Ss above the mean IQ for their group were observed to be significantly less accepting of the disabled than those Ss whose IQs were below the group mean. Another sample of 36 junior and senior high school students (Knittel, 1963) was divided into matched experimental and control groups on the basis of either having or not having a disabled sibling. These Ss were then given a modified form of Auvenshine's Attitude Toward Severely Disabled Students scale and the resultant scores were compared with IQ scores from the Lorge-Thorndike and the California Test of Mental Maturity tests. No significant differences were observed in the attitude scores of high and low IQ Ss in either the experimental (t = 1.46) or control (t = .538) groups.

Three studies of the relationship between intelligence and attitudes toward the disabled have been reported which used measures other than the ATDP with disabled Ss (Larkin, 1962; Bauman, 1954; Bauman, Platt, & Strauss, 1963). A sample of 235 blind adolescents was studied by Larkin (1962), who used a rating scale to measure adjustment to blindness. Although a quantitative measure of intelligence was not obtained, Larkin observed that those Ss qualitatively judged to have higher mental capacity obtained significantly higher adjustment scores than Ss having lower mental capacity (no statistics given). The presumed differentiation of IQ was based on the type of school the Ss were attending (English colleges vs. schools of the "second modern stream").

Using an Emotional Factors Inventory containing a subscale to measure adjustment to blindness, Bauman (1954) found a negative correlation (-. 56) between the Attitudes re Blindness subscale and Wechsler-Bellevue Verbal IQ scores using 443 blind persons. Bauman reports -. 56 as non-significant but subsequent analysis of the correlation at Human Resources suggests that it is statistically significant ($p < .01$). A later study by Bauman, Platt, and Strauss (1963) used the Adolescent Emotional Factors Inventory (AEFI) with 50 blind adolescents. Total adjustment scores on the AEFI were found to correlate -. 43 ($p < .05$) with IQ scores based on the Wechsler-Bellevue Verbal Scale, but the specific relationship was not indicated between IQ and scores on the Attitudes re Blindness subscale of the AEFI. The negative correlations of the two Bauman studies may be interpreted as a positive relationship between intelligence and attitudes toward blindness, since high scores on the EFI and the AEFI indicate negative attitudes toward blindness or poor adjustment.

The studies cited here provide little evidence of a substantial relationship between intelligence and attitudes toward the disabled. Of seven investigations utilizing the ATDP with both non-disabled and disabled persons, only one (Yuker, Block, & Campbell, 1960) using a disabled sample, found a significant positive correlation between ATDP and intelligence scores. This correlation was observed to be quite low, despite its statistical significance.

The results of the studies using measures other than the ATDP are inconclusive and difficult to interpret. One reason for this is that some of the studies did not report statistical data and/or used subjective measures of intelligence.

The Bauman, Platt, and Strauss study (1963) indicates a significant positive correlation between intelligence and total scores on an adjustment to blindness inventory but provides no further statistical information with regard to the subscale measuring attitudes to blindness; and another study by Bauman (1954), like the Bauman, Platt, and Strauss study, measured attitudes toward blindness rather than attitudes toward blind persons. A fifth study (Knittel, 1963) reported a significant negative relationship between intelligence and attitudes in a sample of children.

Although the measures used are not readily comparable, a positive relationship is indicated by the non-ATDP studies, at least for adult subjects, in contradiction to the non-significant relationship found in ATDP studies. It is possible that intelligence may function as a confounding factor in some attitude measures rather than indicating a more general relationship between intelligence and attitudes toward the disabled. This is particularly true if the vocabulary level used in expressing the items is at a high level.

Additional Findings Related to Personality

One interesting aspect of the relationship between attitudes toward the disabled and personality can be found in the personality stereotypes which non-disabled persons attribute to the disabled. Studies reporting stereotypical attitudes may not necessarily be appropriate in a discussion of correlates of attitudes toward the disabled. However, these findings may throw some light on attitudinal components of prejudice and are worth including here.

Four studies have investigated the stereotypical patterns of personality traits which are attributed to the disabled. Mussen and Barker (1944) and Ray (1946) studied the traits most often seen as typical of the "crippled" and wheelchair handicapped while Schaefer (1930) and Rusalem (1965) studied the stereotypes attributed to the blind and deaf-blind.

Mussen and Barker found that "cripples" were rated as being superior to the non-disabled on self-reliance, conscientiousness, religiousness, emotional restraint, kindness, and unselfishness. However, they were rated as being inferior in social adaptability, self-confidence, self-pity, and sensitiveness. At the same time they found evidence of generalized attitudes or biases; some Ss rated "cripples" favorably on most traits while others tended to rate them generally unfavorably on most traits.

Ray investigated the differences in traits attributed to the same person pictured in a wheelchair and with the wheelchair blocked out. According to Barker et al. (1953),

> Ray found that being represented as crippled influenced the rating of the stimulus subject to a statistically significant degree: when identified as crippled, he was judged to be more conscientious, to feel more inferior, to be a better friend, to get better grades, to be more even tempered, to be a better class president, to be more religious, to like parties less, and to be more unhappy, than when depicted as noncrippled (p. 71).

Comparing the study of Mussen and Barker with that of Ray, Barker et al., commented, "Ray's data support Mussen's findings. Together they indicate that disabled persons are perceived differently from non-disabled" (Barker et al., 1953, p. 71). The present scale assumes that this is true only for some people. It assumes that people differ in the extent to which they believe that the disabled person is different from the physically normal. It is precisely this degree of difference which the scale attempts to measure quantitatively.

The traits ranked as most characteristic of the blind by Schaefer's (1930) Ss were dependence, reticence, cheerfulness, and cooperation. Subjects were only given a choice of ten traits and these were preselected from popular stereotypes found in the literature, so the traits given the lowest rankings were not necessarily indicative of traits least associated with the blind.

Rusalem (1965) found that the traits most commonly attributed to the deaf-blind seemed to compose three clusters by simple investigation of the responses: 1) Dependency, 2) Ingratiation, and 3) Inhibition. Two more trait clusters were inferred from the opposites of traits which were least attributed to the deaf-blind: 1) Socialization (as the opposite of the seldom checked traits of Mean, Rough, Stingy, Unpleasant, Humorless) and 2) Failure (opposite of the seldom checked traits of Successful and Attractive).

The stereotypical attitudes about personal characteristics of the disabled found to predominate in the studies of Mussen and Barker, Ray, Schaefer, and Rusalem were quite consistent. Many of the differences are reducible to differences in terminology which actually express underlying similarities. In all four studies, the disabled generally were stereotyped as friendly in an unselfish, kindly, and ingratiating manner while at the same time lacking in social ease and suffering from feelings of inferiority. The main difference is that the two studies which rate the traits of the "crippled," or wheelchair handicapped, seem to stress the view of the "crippled" as conscientious and self-reliant, whereas the last two studies related to the blind and deaf-blind, stress the characteristic of dependency.

Conclusions

This chapter has attempted to present the results of a large number of studies relating the Attitudes Toward Disabled Persons scale to a wide range of personality variables. As is the

case in Chapter 4, the results of the wide range of studies cited here are not entirely consistent. Nonetheless, some tentative conclusions may be drawn. With regard to measures of a variety of different needs, it was pointed out that different measures of the same needs are not always highly correlated with one another. In spite of this contention, there is some tentative evidence that persons with positive attitudes toward the disabled tend to be lower in measures of need for aggression or expression of hostility. In addition, there is some evidence that a need for intraception (i.e., a tendency to see oneself as insightful with regard to self and others) is related to acceptance of the disabled. There is little empirical evidence, however, that the ATDP is significantly related to any of the other needs as reflected in Murray's (1938) hierarchy. With regard to measures of self-concept when the ATDP is administered to non-disabled persons, those with more positive self-concepts tend to be more accepting of the disabled. The tentative assumption that the ATDP may reflect self-concept when used with disabled Ss, discussed in Chapter 3, was not generally supported in the limited studies reviewed. Further research is necessary before this assumption can be confirmed or disconfirmed. When anxiety is correlated with the ATDP the results in every case have been such that those who accept the disabled tend to be lower in anxiety. However, as noted earlier, so many of the correlational values, while in the expected direction, were not significant. This conclusion must be regarded as highly tentative. The variables cited in this chapter include measures of interest as well as measures of IQ. In general, there is no evidence that interest measures are related to attitudes toward the disabled. The same may be said for IQ measures in relation to the ATDP scale, although some other measures of attitudes toward the disabled have reported positive correlations between IQ and acceptance of the disabled. The present authors note that this finding may be, in part, a function of the vocabulary level used in presenting attitude statements.

Chapter 6

ADDITUDINAL CORRELATES OF ATTITUDES TOWARD DISABLED PERSONS

In discussions of attitudes it is usually postulated that attitudes on one topic will be related to attitudes on similar topics. Since the ATDP is an attitudinal measure, one would, therefore, predict that scores on this scale will be related to scores on a number of other attitudinal measures. To the extent that correlations between ATDP scores and scores on other measures of attitudes are in predicted directions, they can be interpreted as evidence for the validity of the ATDP scale. To the extent that such correlations are not in accord with predictions, the validity of the scale becomes questionable. The reader is cautioned, however, that to the degree that the response format between two attitude measures is the same, it is possible that obtained correlations may reflect a common response set.

ATDP scores have been correlated with scores on other measures of attitudes toward disabled persons, and with measures of attitudes toward members of other groups such as old persons and mentally ill persons. They have also been correlated with measures of Machiavellianism, Intellectualism and Dogmatism. The results of these studies will be reported in the following sections.

Attitudes Toward Disabled Persons - Other Measures

As indicated in the review of the literature, many measures of attitudes toward disabled persons have been developed, some of them prior to the ATDP, others subsequently. Few of the instruments developed earlier measured attitudes toward disabled persons in general; most measured attitudes toward specific types of disabled persons such as the blind or deaf. In addition, most of the earlier instruments contained technical deficiencies which limited their usefulness. None of them was widely used. For these reasons, the present authors did not attempt to correlate ATDP scores with these measures. However, some such studies were performed by other investigators; these will be reported here. First, the relationship of ATDP to other measures of attitudes toward disabled persons in general will be discussed, followed by a discussion of the relationship of the ATDP to measures of attitudes toward persons with specific disabilities.

Table 28[1] summarizes the data pertinent to the relationship of the ATDP to other measures of overall attitude toward disabled persons. Knittel (1963) correlated ATDP scores (Form O) with scores on Auvenshine's Attitudes Toward Severely Disabled Students scale (1962) and obtained significant coefficients of correlation of +. 64 for 50 eighth graders and +. 52 for 58 eleventh and twelfth graders. Szuhay (1961) correlated scores on Form A of the ATDP with scores on two forms of the Adult Attitude Toward the Physically Disabled Scale (AATPDS). For a group of 25 persons, significant correlations of -. 72 and -. 66 for Forms A and B of the AATPDS were obtained. That these correlations are negative is due to differences in the scoring procedures for the two scales; the high correlations indicated that the scales measure similar attitudes.

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[1] All Tables are in Appendix B.

Using a sample of 65 adults and adolescents classified as having predominantly aversive attitudes toward disabled persons, Siller and Chipman (1965) found a correlation of +.55 (.01 level) between ATDP-O and a composite measure of general acceptance of the disabled (GA-1). This measure, based on interview responses, is described in Chapter 2 in the section on Other Scorable Techniques. ATDP scores were also correlated with another summary measure of general acceptance (GA-2), derived by combining Siller's Feeling Check List (FCL), a Social Distance Scale, and ATDP scores, after the scores had been standardized by dividing each by its standard deviation. A correlation of +.62 was obtained, significant at the .01 level.

Some of the measures of attitudes toward disability with which the ATDP has been correlated have been measures of social distance or feelings in the presence of disabled persons rather than measures of general acceptance or overall prejudice toward the disabled (see Table 28). In three studies (Siller, 1964; Siller & Chipman, 1965; and Kramer, 1965) significant relationships between ATDP scores and measures of social distance from disabled persons were obtained. Siller (1964) obtained correlations of -.34 ($p < .01$), -.30 ($p < .01$), and -.16 ($p < .05$) for groups of over 200 high school, college and junior high school students, respectively. Siller and Chipman (1965), using a sample of adults and late adolescents, reported a significant correlation of +.30 (.05 level) between ATDP scores and scores on a measure of social distance from the disabled. A total social distance scale (SDS revised and expanded) score was derived by summing the SDS scores toward each of eight disability types. A high score indicated less distance from disabled persons, which accounts for the positive correlation of ATDP and SDS.

Kramer (1965) devised a measure of social distance based on Ames' studies of distance judgments, and on "transactional" theory. He found that non-disabled Ss in a distance judgment experiment placed pictures of disabled persons significantly further away from themselves than pictures of non-disabled persons (statistics not reported). In addition, Ss showed greater variability in the distance settings of pictures of disabled than of non-disabled persons which, Kramer suggests, results from an approach-avoidance conflict in judging pictures of disabled persons. ATDP-B scores were found to correlate -.30 with the standard deviations of the individual Ss in their settings of "disabled" pictures; Ss who demonstrated the greatest variability in their settings tended to have lower ATDP-B scores. Kramer concluded that the ATDP scores reflect conflict over avoidance attitudes toward disabled persons. The evidence from the three studies using measures of the social distance factor indicate that persons with low ATDP scores prefer greater social distance from disabled persons.

Siller (1964) correlated the ATDP-O with his Feeling Check List (FCL), which is a self-report measure of feelings in the presence of the disabled, and obtained significant correlations of +.21, +.32, and +.19 for large samples of college, high school and junior high school students, respectively. Siller and Chipman (1965) using 65 adults and late adolescents selected to include a number of respondents with aversive attitudes, again found a significant correlation ($r = +.44$) between ATDP-O scores and scores on the FCL. The latter was revised and expanded and was used in this study to measure responses to eight different disability types. A total FCL score on attitudes toward disability in general was derived in the same manner as the SDS described above. The FCL correlated +.49 with the SDS.

Table 29 shows the correlations between the ATDP and more narrowly defined aspects of attitudes toward the disabled. Siller and Chipman (1965) correlated the ATDP-O with a number of specific factors selected and categorized from interview material. ATDP-O was found to correlate significantly with the following types of aversive statements about the disabled; attribution of undesirable emotional or behavioral qualities ($r = -.31$), disabled seen as threatening to self ($r = -.37$), disabled seen as potential source of social ostracism ($r = -.32$). The ATDP-O was also found to correlate significantly with the degree of dissonant or contradictory statements made about the disabled ($r = -.39$). The negative correlations in these instances are in the predicted direction: the more contradictory the statements, the lower (i.e., more negative) the ATDP scores. Brewster (1965) used the ATDP in an investigation of the relationship of attitude change to cognitive

dissonance and ambivalence in attitudes toward the disabled. However, his dissertation was received too late by Human Resources to be included in this monograph.[2]

Table 29 also cites Siller and Chipman's (1965) finding that the ATDP was not significantly correlated with aversive statements about the disabled in the areas of: Functional Limitations, Aesthetic-Sexual Qualities, Aesthetic-Physical Qualities, Suffering through Identification, Strained Interaction, Negative Atypicality (fear of the different or unknown), Burden of Doing for the Disabled, and Unfavorable Experience. The ATDP-O was also not significantly correlated with nonaversive statements of Benevolence Toward the Disabled. When the ATDP was correlated with the total number of aversive or negative feelings toward the disabled the correlation was -.48 ($p < .01$); with the total number of positive feelings toward the disabled it was +.21 (not significant). The lack of significant correlation with positive attitudes is partially explained by the fact that the sample had been deliberately weighted with Ss who had aversive attitudes toward the disabled.

In summary, correlations higher than +.50 have been obtained with the ATDP and four broad measures of overall attitude toward the disabled. Somewhat lower correlations were found between the ATDP and measures of specific factors in attitudes toward the disabled. Social distance factors appear to account for a portion of the attitudes reflected in the ATDP. There appears to be a fair degree of consistency among the various measures of overall attitude toward disabled persons and the ATDP, although some more narrowly defined specific attitude factors were not significantly correlated with the ATDP. To the extent that these instruments are adequate, the results may be taken as indicative of the validity of the ATDP.

One study correlated the ATDP with a measure of attitude toward specific disability types (see Table 30). Siller and Chipman (1965) found that the ATDP correlated significantly beyond the .05 level with attitudes toward amputees and persons with cerebral palsy, and at the .01 level with attitudes toward persons with skin-disorders, blind persons, and persons with body deformations. These attitudes were measured by eight versions of the revised FCL referring to persons with one of eight specific disabilities. ATDP scores were not significantly correlated with attitudes, as measured by the Feeling Check List, toward deaf persons, paralyzed persons, and those with muscular dystrophy. The same eight disability types were used to modify Siller's revised SDS. In this case, the ATDP was found to be correlated significantly beyond the .05 level with attitudes toward amputees, persons with skin disorders, blind persons, and persons with body deformations. The ATDP was not significantly correlated with attitudes toward the deaf, paralyzed persons, persons with cerebral palsy, and persons with muscular dystrophy. The ATDP, then, appears to be more consistently related to attitudes toward amputees, persons with skin-disorders, blind persons, and persons with muscular dystrophy than to the other disabilities mentioned.

While attitudes toward "disabled people," as measured by the ATDP, have been found to be correlated with attitudes toward specific disabilities, there is also evidence that there are differences between people's attitudes toward a specific disability group and "disabled people" in general. Bates, Rothaus, and Vineberg (1965) found that non-disabled college students had significantly higher mean scores on the ATDP-O when it was modified by substituting "heart condition" for "disabled." According to Bates (1965), the 70 Ss yielded an F ratio of 21.86 ($p < .01$) in a comparison of the four stimulus concepts of "disabled," "handicapped," "heart condition," and "nervous breakdown." In addition, a sample of 19 nurses produced an F ratio of 4.08 ($p < .05$) between the above four concepts plus "wheelchair" when substituted in the ATDP-O. However, 42 disabled Ss produced a significant F ratio only between the terms "disabled" and "handicapped," but not the other concepts.

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[2] See Appendix D for this and other references received too late to be included in this monograph.

Bates expressed the opinion that the ATDP use of the term "disabled" is not a valid representation of attitudes toward all the specific disabilities which may be associated with that concept, and therefore is of doubtful utility. Using a direct question technique, Bates found that the most frequent definitions of the term "disabled" referred to obvious physical impairments and sensory defects.

The present authors recognize that the term "disabled" may provide a different frame of reference for different individuals. They recognize further the validity of the point made by Bates et al, that disability usually connotes obvious physical impairments and sensory defects. Despite this, however, the authors believe that the ATDP is still a valid instrument and that the adequacy of the ATDP depends upon the uses to which it is put. As indicated in Chapter 3, the authors believe that the ATDP is not adequate as a predictor of the behavior of one individual, but that it can be used as a summary measure for groups of individuals. In the long run, the adequacy of the ATDP must be determined by empirical rather than theoretical considerations. To the extent that the ATDP correlates with other measures and behavior it can be considered an adequate measuring instrument.

The fact that the ATDP correlates with measures of attitudes toward a number of specific disabilities, as well as with measures of prejudice toward other groups (as discussed below under the correlates of Prejudice and Authoritarianism), provides evidence that the ATDP is a suitable instrument where a general measure of prejudice toward disability groups is desired.

Bates (1965) appears to be the only investigator of the differences between attitudes toward persons with a specific disability and attitudes toward persons labelled "disabled" and "handicapped." However, many other investigators have investigated differences in attitudes toward specific disabilities. Whiteman and Lukoff (1965) found significant differences between attitudes toward "blindness" and "physical handicap" when these words were inserted in their attitude rating scales or semantic differential scales. "Blindness" was rated as frustrating, unpleasant, and worse to have than "physical handicap" (t's not given, $p < .05$). More important, however, is Whiteman and Lukoff's failure to find significant differences in the ratings of attributes of "blind persons" vs. "physically handicapped people." They conclude that attitudes are equally prejudicial toward both groups of persons although "blindness" is seen as a worse handicap than "physical handicap." Their findings, with a sample of 177 college students, underscore the necessity for differentiating between attitudes toward disabled persons and attitudes toward a disability. This is supported in another study by Whiteman and Lukoff (1960a) and Lukoff and Whiteman (1961) which reported that college students tended to appraise "blindness" more negatively than "blind people" when presented with otherwise identical semantic differential scales.

Similarly, Siller (1965) found that 91 college students responded more unfavorably to the term "amputee" than to the term "person missing a leg," using a developmental multidimensional attitude scale. According to Siller, this instrument is being developed to identify and measure factor analytically derived dimensions of attitudes toward the disabled. He feels that the difference noted above is due to the fact that the first term emphasizes the amputation and the second term, the person. In this regard, Wright (1960, p. 8) feels that the terminology "physically handicapped person" or "handicapped person" implies a concept of an individual whose existence is reduced "... to the disability aspect of his physique," i.e., a person who is handicapped and nothing more. Wright feels that prejudicial stressing of the differences between disabled persons and nondisabled persons is reduced by using the expression, "a person with a physical handicap."

Thus the evidence indicates that it is important to distinguish between attitudes toward disabled persons and attitudes toward disability since measuring instruments yield different scores. Several explanations of the differences in the two types of stimulus words may be advanced. It could be maintained that a person's expressed attitudes toward disability will be contaminated by fears relating to the disability as a threat to the individual's well being. It could also be maintained that in expressing attitudes toward disabled persons, the concept of the person is

central and that attitudes towards disabled persons will be primarily related to attitudes toward other groups of persons.

Taking a somewhat different tack one could argue that while the two concepts are relatively similar, some respondents might be freer in expressing their attitudes toward the disabled than they are in expressing their attitudes toward a disabled individual. In this connection it would be stated that there might be more of a social desirability component in discussions of persons than in discussions of disability. Thus, the argument could be forwarded that use of "disabled" might evoke more negative attitudes than use of "disabled persons." Whatever the expression, however, the point remains that the two concepts must be distinguished.

The ATDP uses "disabled persons" and does not refer to any specific form of disability. Thus, the items are unidimensional in this respect, and may be expected to produce consistent responses across all items. This does not imply, however, that the ATDP is necessarily unidimensional in the attitude content of the different items, or that "disabled person" means the same thing to all respondents.

Disability Type Preferences

A number of investigators have studied the relative preference rankings of different categories of disability; i.e., respondents were asked whether they would prefer one group or another in a given set of circumstances. Since these studies are somewhat peripheral to the present monograph, they will be summarized only briefly.

Some of the studies have investigated the preferences of persons such as teachers and rehabilitation workers for working with different disability types. Kvaraceus (1956) found that graduate students (N=84) would rather teach the physically disabled than the blind or deaf. Murphy, Dickstein, and Dripps (1960) found that 309 education students preferred to teach the "physically handicapped" rather than the "hearing handicapped." However, Appell, Williams, and Fishell (1963) found that 195 teachers, doctors, social workers, and psychologists would rather work with the "hearing-impaired" and "visually-impaired" than with the cerebral palsied; and Warren, Turner, and Brody (1964) found that students preferred teaching the "hearing-handicapped" and "sight-handicapped" to teaching the brain-injured. None of the above studies reported the levels of significance of the preference differences.

Three studies investigated employers' preferences. Using a 7-point rating scale of employment acceptability, Rickard, Triandis and Patterson (1963) found that 105 personnel directors and school administrators preferred to employ ex-tubercular persons rather than the wheelchair handicapped, the wheelchair handicapped rather than the deaf, and the deaf rather than the epileptic. Each F ratio was significant at the .01 level or beyond. In a study by Nikoloff (1962), 197 school principals, using a checklist of employability as teachers, rejected persons with an artificial leg or crutch significantly less often than persons with a speech handicap who, in turn, were rejected less often than the blind or deaf. Baxt, David, Jaffe and Wang (1959), using a structured interview, found that the orthopedically disabled were the most acceptable to employees in the New York area, followed closely by cardiacs. Epileptics, persons with cerebral palsy, and persons with visual problems, in that order, were much less acceptable. The significance of the differences was not determined.

Statistical significance has seldom been established in the studies of disability preference so far reviewed. Nevertheless, the studies are generally consistant in the preferences expressed. When the "disabled persons" are being rated in an occupational capacity or professional relationship, the crippling disabilities are most generally preferred (crutch, wheelchair, physically disabled), over the sensory disabilities (deaf, blind) which are generally preferred over the brain-related disabilities (brain-injured, cerebral palsied, epileptic). Perhaps brain-related

disabilities are associated in people's minds with mental retardation. Mental retardation was generally rated the lowest in all preference studies in which it was compared with other types of exceptionality (Murphy et al., 1960; Warren et al., 1964; Appell et al., 1963; Kvaraceus, 1956).

Disability preferences are less clearcut when the disabled groups are rated in terms of personal qualities and social acceptance than when they are rated in terms of professional capacity. Five studies have compared attitudes toward persons with different types of disabilities or toward different disabilities per se, in regard to personal or social acceptability rather than employability or teaching preference (Whiteman & Lukoff, 1965; Strong, 1931; Siller, 1963; Richardson et al. 1961; and Gowman, 1957). Whiteman and Lukoff (1965), as discussed earlier in the chapter, found that blindness was rated as more unpleasant and worse to have than "physical handicap." In this case, the disability itself was rated in the same direction found when employment was being considered. Strong (1931) using a checklist of "liking," "disliking," or "indifferent" toward various types of disabled persons, found that "cripples" tended to be preferred over "blind people" and "deaf-mutes," although the significance of the differences was not established in this early study. Again, these findings are similar to those in which employment or teaching preference was considered.

The findings of other studies, however, suggest the influence of an aesthetic factor in social and personal preferences. Siller (1963) used his FCL and SDS with 50 high school students, 269 college students, and 75 mothers to measure attitudes toward persons with a variety of disabilities. Blind people and deaf people were most favorably rated on both the FCL and SDS, while people with body deformations (dwarf, hunchback) and skin disorders (burns, severe acne) were rated lowest on the FCL; those with cerebral palsy, muscular distrophy and body deformations were rated lowest on the SDS (no statistics reported). Those with cosmetic disabilities tended to be rated more severely in terms of personal acceptance (FCL) and social distance (SDS) than those with sensory disabilities.

Richardson, Hastorf, Goodman and Dornbusch (1961) obtained similar results with 321 non-disabled children in rating social acceptability from pictures of other children. The order of ranking was: child with crutches and braces as most acceptable, child in wheelchair covered by blanket, child with left hand missing, child with limited facial disfigurement on one side of mouth. The more disfiguring disabilities were least acceptable. The same ranking order was also obtained with 177 disabled children given this test.

Gowman (1957) used a ranking scale with 104 high school students who were asked to rate a disability rather than persons with a disability. Blindness was seen as far worse "to face" than loss of leg, deafness, loss of arm and facial burns, ranked in that order. There was a tendency for the sensory losses (blindness, deafness) to be feared more than the disfiguring losses, loss of arm, burns, when the self was reference point. However, when ranked in reference to acceptance in a prospective mate, the disfiguring losses were more rejected than the sensory losses. This finding again suggests the existence of differences between attitudes toward a disability when it represents a threat to self and when it involves acceptance of disabled persons.

Although most of the studies dealing with disability type preference do not report statistical significance, it seems clear that the disfiguring disabilities are less socially acceptable in others while the functionally limiting handicaps are seen as less acceptable for the self or in others with whom the relationship is professional (teaching, training, or employment).

A number of studies have compared attitudes toward the blind and the deaf. Both Maglione (1965) and Strong (1931) reported more favorable attitudes toward the blind than toward the deaf, although the statistical significance of the results is not reported. Blanton and Nunnally (1964), on the other hand, reported that adolescents rated deaf persons higher, but that the differences were not statistically significant. Studies by both Gowman (1957) and Bertin (1959)

reported that "blindness" was rated as a worse handicap than deafness. While there is some divergence in these results, they appear to be relatively consistent. Apparently blindness is viewed simultaneously as more handicapping and as more socially acceptable. Deafness, on the other hand, is viewed as less of a general handicap but as more of a social handicap. This may reflect the difficulties encountered by the deaf in social communication.

Attitudes Toward Mentally Ill Persons, Old Persons, and Alcoholics

Persons with physical disabilities can be viewed as constituting one segment of the larger group of persons with disabilities of all kinds - physical, mental, social, economic, etc. Persons in each of these groups can be viewed as disadvantaged in one way or another. Among the groups of disadvantaged which could be considered as similar to the physically disabled are persons who are mentally ill and persons who are aged (and thus, may presumably have some kind of physical or mental disability). Several correlational studies have been performed in which ATDP scores were related to measures of attitudes toward these groups (see Table 31).

In studies conducted at Human Resources (1964), ATDP scores were found to be correlated with scores on the Opinions about Mental Illness Scale (OMI) developed by Cohen and Struening (1959, 1962). The respondents in the Human Resources study, who were predominantly physically disabled, completed each of the three forms of the ATDP as well as the OMI. ATDP scores on each form were found to correlate significantly and positively with the OMI sub-scales measuring Benevolence, Mental Hygiene Ideology, and Social Restrictiveness. ATDP scores on Form B were found to correlate significantly and negatively with the OMI sub-scale measuring Authoritarianism, while scores on Forms O and A, though not significantly correlated with this sub-scale, were also in the predicted negative direction. ATDP scores were not significantly correlated with scores on the sub-scale measuring Interpersonal Etiology. Table 31 shows that the significant correlations ranged from +.19 to +.34.

As shown on Table 32, ATDP scores were also correlated with the Attitudes Toward Old Persons Scale (ATOP) (Block & Yuker, 1964b) developed from a scale used by Kogan (1961). Studies conducted by the staff at Human Resources (1964) using the disabled population of Abilities employees, yielded low but significant coefficients of correlation. Three correlations, using the three forms of the ATDP, ranged from +.26 to +.44; all were significant at the .01 level or beyond (Human Resources, 1964). Three other findings, (Human Resources, 1962 and Eisler, 1964), in which only non-disabled college students were used as Ss, yielded nonsignificant correlations of +.02 and +.27 between ATDP-A and -B and the ATOP, and +.21 ($p < .05$) between ATDP-O and ATOP. Table 32 also shows that the results reported by McCourt (1963), using professional and non-professional staff in geriatric and non-geriatric hospitals were similar to those of Eisler using non-disabled Ss, and Human Resources using disabled Ss. Of 12 correlations, he obtained nine significant correlations ranging from +.33 to +.68 between ATDP-O scores and scores on the Staff Geriatric Attitude (S-G-A) scale designed to measure attitudes toward geriatric patients.

Most of these results were in the predicted directions. They tend to confirm the hypothesis that attitudes toward disabled persons belong to a constellation of attitudes toward people who are physically or mentally different. In this sense, the results can be taken as supporting the validity of the ATDP.

Although there is evidence of a relationship between attitudes toward the disabled and attitudes toward the mentally ill and old people, there is also evidence of differences among these attitudes (see Table 33). Freed (1964) used a version of the ATDP-O in which the words "mentally ill" were substituted for the word "disabled." Both this and the original ATDP-O scales were administered to samples of college students and staff members at a mental hospital. No significant difference was found between student and staff means when compared on either of the two

scales, but for both samples a significant difference ($p < .001$) was found between their respective mean scores on the ATDP-O and their respective mean scores on the mental illness scale. Both groups scored higher on the ATDP than on the mental illness scale.

In the same study Freed reported a second adaption of the ATDP-O. In this one he substituted the term "alcoholic" for the term "disabled." Once again, he found a significant difference ($p < .001$) between respective mean scores on the ATDP-O and alcoholism scales for both the student and staff samples. On the basis of this study, it appears that people have more accepting attitudes toward disabled persons than toward either mentally ill persons or alcoholic persons.

Bates, Rothaus, and Vineberg (1965) also conducted a study in which other terms were substituted in the ATDP-O for "disabled." They found no significant differences between the mean scores on the ATDP in response to the term "nervous breakdown" and scores in response to the term "disabled" for both disabled and non-disabled Ss (t's not given). In each case, however, "nervous breakdown" was rated slightly less favorably. Possibly the term "nervous breakdown" does not produce as severe a response as the term "mental illness" which produced the significant differences in the Freed study.

A study by Barker (1964) revealed some interesting constellations of correlations between attitudes toward various types of mentally and physically disabled persons as measured by a semantic differential scale used in an earlier study by Nunnally (1961). Barker concludes that attitudes toward these various groups may depend upon the perceived functionality or organicity of the handicap. For instance, Table 34 reveals that on a factor which Barker terms "functional," high loadings were found for attitudes toward alcoholics and persons with various mental disorders; a moderate factor loading was found for attitudes toward persons with a stomach ulcer. An "organic" factor was related to attitudes toward various types of chronic and curable organically-caused disabilities or illnesses. The factor analysis was performed only with attitudes toward disabilities which had already been found to correlate with each other beyond the .05 level of significance in the Nunnally study. While attitudes toward various mentally and physically handicapped groups are correlated to varying degrees, Barker's findings illuminate some of the determinants of differences in attitudes toward these various disabilities.

The Bates (1965) study also revealed clusters of organic and functional handicaps among attitudes toward various handicaps and the generic terms, "handicapped" and "disabled." However, in this study the organic disabilities separated into two clusters: "obvious" and "hidden" disabilities. The overall terms, "has handicap" and "has disability" are closely associated within the cluster of the more obvious physical disabilities (including "in wheelchair," "is blind," "on crutches," "lost arm"). The more hidden disabilities "has tuberculosis," "has heart condition," "is deaf," and "frequent headaches," tended to cluster in a second grouping. A third cluster of disabilities included perceived functional or mental difficulties: "has epilepsy," "has nervous breakdown," "has personal problems," "has frequent headaches." Bates' findings support and elaborate the findings of Barker in that both studies found an organic and functional cluster in attitudes toward various disabilities but the Bates study found that organic disorders were clustered into "hidden" and "obvious."

Prejudice and Authoritarianism

The evidence justifies regarding attitudes toward disabled persons as part of a constellation of attitudes toward persons who are physically or psychologically different. It is conceivable, therefore, that attitudes toward the disabled are part of a larger constellation of attitudes toward persons who are "different" in any way. To evaluate this concept, the results of studies which correlated ATDP scores with scores on measures of prejudice and ethnocentrism will be examined.

It was predicted that individuals who were not accepting of disabled persons would tend to be non-accepting of other distinctive groups identified by racial and ethnic terms. If this were the case, this could be considered evidence for the validity of the ATDP. This prediction was based on the results of studies such as the one of Adorno, Frenkel-Brunswik, Levinson, and Sanford (1950) which shows that prejudice tends to be a general characteristic of certain individuals. In other words, prejudiced persons tended to reject whatever groups they perceive as different from themselves, rather than only one or two specific outgroups.

To test this prediction ATDP scores were correlated with measures of prejudice toward minority groups. In a study conducted at Human Resources, Chesler (1965) correlated ATDP-O scores with four locally constructed measures of prejudice toward various minority groups. He reported five correlation coefficients, all of them in the predicted direction, and all of them statistically significant beyond the .01 level (see Table 35). His results showed low ATDP-O scores to be related to prejudice toward racial groups, religious groups, national groups, and social classes. The correlations ranged from -.40 to -.46; the median correlation was -.44. Further, Chesler found that the correlation between ATDP-O scores and the overall measure of prejudice, which includes all of the four sub-groups, was -.52 ($p < .01$). The split-half reliability of the overall measure was +.91.

Table 35 also shows that three other studies revealed correlations between measures of minority group prejudice and other measures of attitudes toward disability. Cowen, Underberg and Verrillo (1958) reported significant correlations between attitudes towards blindness and scores on the California Anti-Minority and Anti-Negro scales in a sample of college students. Szuhay (1961) reported a significant correlation between attitudes of children toward disabled children and toward Negro children; both attitudes were measured by his Children's Picture Sociometric Attitude Scale. Lukoff and Whiteman (1963) reported that a measure of ethnic tolerance (not described) produced a low but significant positive correlation with indices of attitudes about Emotional Traits and Independence of blind persons, and Interaction with blind persons. Ethnic tolerance did not correlate significantly with attitudes of Pity-Sympathy, Evaluation of Blindness, or Non-Protectiveness. Lukoff and Whiteman concluded that Ethnic Tolerance is related to attitudes of social acceptance toward the blind but is unrelated to protectiveness-sympathy attitudes, and that the same conditions foster attitudes of tolerance and acceptance toward both ethnic and disabled groups.

In order to test additional predictions based on Adorno's findings, the ATDP has been correlated with the California F scale, developed by Adorno and his associates (1950). It was predicted that authoritarianism as measured by F scale would correlate negatively with ATDP scores. The results, summarized in Table 36, did not substantially agree with Adorno's findings that authoritarian attitudes are highly correlated with measures of general and specific prejudice, or his evidence that the F scale may be used as a measure of overall prejudice in lieu of measures which mention specific minority groups. Seven correlations with college students (Human Resources, 1959, 1960, 1962) using the three forms of the ATDP, were found to be nonsignificant. They ranged from -.12 to +.13. An eighth correlation yielded a value of -.44 ($p < .05$). A low, but significant negative correlation (-.21; $p < .05$) with the ATDP-B was reported by Lamers (1965). Both significant correlations were in the predicted direction.

Table 36 also shows the results of three studies in which the F scale was correlated with attitudes measures other than the ATDP. Cowen, Underberg, and Verrillo (1958) reported a significant positive correlation ($p < .01$) between scores on a shortened version of the F scale and scores on their scale measuring attitudes toward blindness. Similarly, Whiteman and Lukoff (1960b) reported positive correlations between F scale scores and the Positive Stereotype subscale of their Attitudes to Blindness scale. Whiteman and Lukoff, however, indicate that the significant correlation disappeared when intelligence was partialled out of the results, while the correlation between intelligence and positive stereotype remained significant when the F scale factor was partialled out. Rickard, Triandis, and Patterson (1963) reported a relationship between scores on a 10-item F scale (five positive items from the California F scale and five negative items from

Christie's F scale), and scores on a rating scale measuring rejection by employers of persons with various disabilities. He found in one third of the correlations between the F scale and ratings of various disabilities that a negative attitude toward the employment of disabled persons was significantly related to F scores. In each of these three studies, all of the correlations were all in the same direction; that is, favorable attitudes toward disability were found to be related to a lack of authoritarian attitudes.

In most of the studies reported above, a positive relationship was found between non-accepting attitudes toward disabled persons and attitudes of prejudice toward other minority groups. Consequently, we can conclude that attitudes toward disabled persons appear to be congruent with other attitudes indicative either of prejudice or acceptance of outgroup members.

With regard to the less consistent findings concerning correlations between prejudice toward disabled persons and the F scale, it should be recalled that Whiteman and Lukoff (1960b) and Lukoff and Whiteman (1963) found measures of ethnic tolerance and authoritarianism to be correlated with only certain of their factored subscales of prejudice toward the blind. Authoritarianism may well be related only to certain aspects of prejudice which may be represented to a greater or lesser degree on the various measures of attitudes toward the disabled. This could account for differences in degree and significance of F scale correlations with the various measures.

Other Attitude Measures

This section will discuss the relationship between attitudes toward the disabled and measures of intellectualism, Machiavellianism, dogmatism, and other social attitude measures. In eight correlations conducted at Human Resources (1962, 1964), the ATDP was correlated with an Intellectualism-Pragmatism scale developed by Yuker and Block (1964).

Table 37 reveals that the correlations for disabled and non-disabled samples ranged from +. 09 to +. 46. Two of the five correlations for the non-disabled samples were significant, and two of the three correlations for disabled samples were significant. The three forms of the ATDP were used. Thus, there is the suggestion of a small degree of relation between intellectualism and positive attitudes toward the disabled as measured by the ATDP.

Table 38 shows the results of eight analyses done at Human Resources (1959, 1960, 1962) which correlated the three forms of the ATDP with scores on a Machiavellianism scale developed by Christie (1956) and Christie and Geis (in press). Machiavellianism is a measure of a tendency to view other people as manipulatable or exploitable for one's own purposes so that one will not be manipulated by them, instead. Six of the eight correlations were negative, and three of the negative correlations were significant. The results indicate that persons with Machiavellian attitudes tend to be somewhat less accepting of disabled persons. However, given the present evidence, this relationship cannot be regarded as conclusive.

Following the study by Harrison (1965), it was predicted that attitudes toward the disabled would be related to a tendency to hold dogmatic (closed-minded and rigid) attitudes. Harrison studied the relationship of the ATDP-O to Rokeach's Dogmatism Scale (DS) - Form E, and found that the two scales were correlated +. 41 ($p < .01$) in a sample of 65 college students. In addition, the mean score on the ATDP-O was significantly higher for the highest scoring third on the DS than for the lowest scoring, thus confirming the positive correlation. The positive direction of the correlation is due to Harrison's reverse scoring[3] of the ATDP-O in which high scores

[3] The earliest studies done with the ATDP-O were scored in the reverse direction from the present scoring, i. e., high scores indicated negative attitudes. This reversal was corrected in the reports of other early investigators.

reflected low acceptance of the disabled. Since closed-minded, rigid, dogmatic attitudes, as measured by the Dogmatism Scale, are considered by Rokeach to measure, in broader scope, the dimensions of attitude tapped by the F scale of authoritarianism, it is to be expected that dogmatism, authoritarianism, and prejudice against disabled and minority groups would be intercorrelated. However, no known multiple correlation has yet been performed with these variables to determine the exact relationship. Genskow and Maglione (1965) also correlated the ATDP-O with Rokeach's Dogmatism Scale - Form E, using eight groups of college students. The correlations ranged from -. 01 to -. 05. Although all the correlations were negative, none of them approached significance, and cannot be considered to support the original hypothesis.

On the other hand, some support for Harrison's findings appears in a study by Rickard, Triandis, and Patterson (1963), who asked 87 school administrators to rate persons with various disabilities for two kinds of jobs. The Dogmatism Scale was correlated with the rejection score of each of four disabilities for each of the two jobs. The correlations ranged from +. 03 to +. 27, the median correlation was +. 14. Although the median correlation was not significant at the . 05 level (r required for this size sample is . 18), the correlations were all in the predicted direction, i. e., high dogmatism with high rejection of the disabled. Of the eight correlations with the DS, two correlations with rejection of deaf employees and one with the rejection of extubercular employees were significant beyond the . 05 level. In Rickard's system for scoring the ratings for each disability type, it is possible to partial out the factors of competence and capability, and Rickard feels that the resulting score is a measure of prejudice toward the disabled regardless of the factor of competence and capability for the given job.

Finally, it might be hypothesized that social attitudes are positively correlated with acceptance of other people, and therefore, with acceptance of the disabled. Fischbein (1962) reports two nonsignificant correlations between the ATDP-O and the Minnesota Inventory of Social Behavior-Form B (r=+. 11) and Form P (r=+. 16) with 30 college students and adults in various occupations. She also reports a nonsignificant correlation (r=+. 12) with the Minnesota Teaching Attitude Inventory with the same sample. It is necessary, therefore, to gain additional evidence in regard to Fischbein's findings to evaluate this hypothesis.

Conclusions

This chapter has presented data concerning the relationship between the ATDP and other attitudinal measures. Once again, it is difficult to reconcile the large number of studies cited in the chapter. However, here too, certain tentative conclusions can be reported. In general, there seems to be a substantial relationship between the ATDP scale and other general measures of attitudes toward the disabled. As other attitude measures begin to focus more specifically upon subdimensions of generalized attitudes toward the disabled, the correlational values tend to be somewhat lower. Chapter 6 has also cited evidence regarding the relationship of ATDP scores and other measures of attitudes towards "disadvantaged or disabled" groups. The data suggest that acceptance of the physically disabled is positively related to acceptance of people who are different from the respondent, including such groups as the mentally ill, the aged, and a variety of ethnic groups. Somewhat conflicting results are presented with regard to the relationship of the ATDP with the authoritarian personality scale. While these results are conflicting there is some support for the hypothesis that acceptance of the disabled tends to be somewhat greater in non-authoritarian samples.

Finally, although an extremely limited number of studies have investigated the following issues, it may be tentatively reported that persons with an intellectual as opposed to a pragmatic orientation toward life are more accepting of the disabled as are persons who are not Machiavellian in nature. Measures of dogmatism, however, show no significant relationship to the ATDP.

Chapter 7

EXPERIENTIAL AND BEHAVIORAL CORRELATES OF ATTITUDES TOWARD DISABLED PERSONS

In the literature dealing with the relationship between attitudes and behavior one finds that two kinds of relationships are discussed. On the one hand, there are discussions of the relationships between attitudes and the past experiences of the individual. That is, it is assumed that the particular attitudes which a person holds will be a function of specific experiences that the person has undergone. Since attitudes are learned, it can be assumed that they are learned in particular experiential contexts. Thus, one would predict the attitude that non-disabled persons have toward disabled persons would be a function of their past experiences with disabled persons. Among these experiences would be the extent of their contact with disabled individuals and also the extent to which they have had specific "educational" experiences designed to provide them with information about disabled persons.

When one considers the relationship between attitudes and past experiences in disabled individuals, the situation is somewhat different. Here one would predict that attitudes might be a function of such specific past experiences as the extent of hospitalization. This will be discussed in this chapter. Many other experiences such as rehabilitation or employment would also be expected to affect the attitudes of the disabled. These variables, however, were not examined by any of the studies discussed in this monograph.

Considering the relationship between attitudes and behavior from another point of view, one would predict that a person's attitudes would be manifested in his present behavior. Thus, one would predict that non-disabled persons with positive attitudes toward disabled persons would behave differently from non-disabled persons with negative attitudes. Unfortunately, there have been few, if any, studies which have investigated this particular relationship, but it is clear that they are essential to a complete understanding of the role of attitudes toward the disabled.

When one considers disabled persons, it would also be predicted that their attitudes should be reflected in their behavior. In his case, there are data available. A number of investigations have compared the behavior of disabled individuals who manifest either positive or negative attitudes toward disabled persons. Some of these studies have been concerned with industrial and rehabilitation performance measures and these will also be discussed in the present chapter.

Experiential Variables

Contact. One contribution to evaluation of the validity of the ATDP involves the correlation of the scale with the degree of contact the respondent has had with disabled persons. It was hypothesized in the original monograph (Yuker, Block, & Campbell, 1960) that a person with a relatively high degree of contact with disabled persons would tend to be more accepting of them than one with less contact. This hypothesis was based on the assumption that prejudice is often, at least in part, related to a lack of direct, equal-status contact with the group toward whom the prejudice is expressed. Consequently, the greater the degree of contact with a particular group, the lower the expected amount of prejudice toward that group. This is consistent with Homans' (1950) hypothesis which states that contact results in increased positive attitudes. Hence, an

individual who initially may express negative sentiments toward a group, would be expected to become more positive in attitude as the number of contacts with members of the group increases, regardless of the type of contact.

However, it has been demonstrated in the literature of social psychology, that the type of contact is sometimes of crucial importance. One might predict differences in attitudes as a result of contacts with a disabled relative, a disabled friend or acquaintance, a disabled co-worker, or the contact of professional staffs working with disabled persons in rehabilitation and nursing settings. Thus, type of contact can be considered apart from a simple tabulation of the number of contacts with disabled individuals. Additionally, one would predict that an individual's attitude toward disabled persons is, in part, a function of specific experiences with one or a few disabled persons. That is, one might expect that an individual whose only contact with the disabled was a positive or negative experience with one disabled individual might tend to generalize these attitudes to the disabled population as a whole. In contrast to Homans, proponents of balance theories, such as Festinger (1957), suggest that the initial attitude of an individual towards a particular group determines the effect of additional experiences with the group. An individual whose initial attitude toward a group is negative will tend to become more negative with increased group contact. An individual whose attitude toward a group is negative will, upon presentation of a situation which stimulates positive attitudes with members, tend to avoid "dissonance" by becoming more generally negative in his attitude through minimizing the positive aspects of the contact.

Although type of contact has been considered to be an important determinant of attitudes, few studies have adequately controlled this variable. In addition, experimental definitions of both type and extent of contact have differed widely among investigators.

In the study reported in the original ATDP monograph (Yuker et al., 1960), contact was defined as having a disabled instructor for one semester. ATDP-O scores were examined at the beginning and end of the semester to see whether there was an increase or decrease in the acceptance of the disabled after this experience. However, the type of relationship between student and instructor was not controlled; no attempt was made to determine whether the change score was related to the grade that the student obtained in the course.

Similarly, contact with a disabled individual as a friend or as a sibling might have a different influence on one's attitude than contact with disabled individuals in a rehabilitation setting. It could be maintained, as has been done by Bell (1962), that rehabilitation workers might obtain relatively low scores on the ATDP, which might reflect a realistic acceptance of the limitations of disabled persons rather than prejudice. On the other hand, it might be maintained that rehabilitation workers are not accepting of disabled persons. They may tend to think of disabled persons as "cases" and categorize them, rather than reacting to them as unique individuals.

Thus, it is imperative to have data relating to both the type of contact and its extent to understand the relationship between contact and attitudes. While in basic agreement with Homans' hypothesis that increased contact results in more positive attitudes toward a group, the present authors would modify it to state that only equal-status social and professional contacts will increase positive attitudes and diminish prejudice, and that limited or specialized types of interactions with disabled persons may result in less positive or unchanged attitudes. This position is helpful in explaining the results of the studies in which contact was found to not significantly change the ATDP scores.

Another factor which creates problems in discussing contact is that certain contact situations involve specific educational experiences (e.g., nursing, rehabilitation) which are concommitant with contact. Although specific educational experiences are discussed in the next section, we will attempt to note where this factor may be contaminating studies which are concerned primarily with contact.

Data are available from over twenty studies, more than half of which show that persons who had more contact with disabled individuals tended to obtain higher scores on the ATDP than persons with less contact. Of the studies investigating only extent of contact (see Table 39[1]), three ATDP studies (Yuker, Block, & Campbell, 1960; Siller, 1964; and Chesler, 1965) found a significant positive relationship between contact and attitudes toward the disabled, and four studies using measures other than the ATDP found the same significant positive relationships (Roeher, 1959; Whiteman & Lukoff, 1962b; Szuhay, 1961; and Bateman, 1962). In addition one ATDP study (Lamers, 1965) reports a positive relationship but the significance is not given and one ATDP study (Fischbein, 1962) reports a contradictory negative correlation which "approaches" significance at the .05 level. Counterbalancing these studies, two ATDP studies found no significant relationship between attitudes and extent of contact (Coggin, 1964; and Human Resources, 1962) and four non-ATDP studies reported no significant relationship (Rusalem, 1950; Cowen, Underberg, & Verrillo, 1958; Baskin & Herman, 1951; and Siller & Chipman, 1965).

Yuker, Block and Campbell (1960) reported that scores on the ATDP-O were positively related to the amount of contact that non-disabled persons had with disabled persons. A chi square analysis of high and low ATDP-O scores and high and low contact groups was significant at the .001 level. Similarly, Chesler (1965) found that Ss who reported that they did not know disabled people scored significantly lower on the ATDP-O scale than Ss who did know disabled people ($p < .01$). Siller (1964), using a 3-point scale of contact with the disabled (none - some - extensive), found that ATDP scores were significantly positively correlated ($p < .01$) with contact scores for both junior ($N = 235$) and senior ($N = 229$) high school samples.

However, Fischbein (1962), in relating ATDP-O scores to a 4-point contact scale ranging from "almost never" to "frequently," found a negative correlation of -.35 for a sample of 30 college students and clerical workers. Fischbein suggests that the negative correlation may have been due to a preponderance of unfavorable contact experiences among her Ss. If this is true, her negative correlation would tend to support the hypothesis that type of contact may influence attitudes. Also supporting this hypothesis is a finding of Siller and Chipman's (1965) that there are significant positive correlations ($p < .01$) between four different measures of attitudes toward the disabled and a scale measuring "quality" of contact with the disabled. The quality score was a sum of the ratings on a 3-point scale (1 - unpleasant, 2 - neutral, 3 - pleasant) for each of the experiences with a disabled person, reported by 65 Ss. The Quality of Contact score was correlated +.42 and +.43, respectively, with two measures of general acceptance (GA-1 and GA-2), +.41 with the Feeling Check List summary score of attitudes toward eight types of disabled persons, and +.45 with Siller's Social Distance Scale; also a summary score. (These four measures devised by Siller are described in Chapter 2 and elsewhere in Chapters 4 and 5.) It should be noted, however, that Siller and Chipman did not find a significant correlation between the ATDP-O and the Quality of Contact score.

Of the four studies using attitude measures other than the ATDP which reported significant positive correlations with amount of contact, two correlated this variable with attitudes toward blindness. Whiteman and Lukoff (1962b) report that individuals who are acquainted with blind people are significantly less prone to see them as unhappy on the Emotional Attributes subscale of their Attitudes to Blindness scale, but the authors do not report statistics or significance levels. Bateman (1962) dichotomized a group of 232 sighted children into "know other blind children" and "do not know blind children," and related contact to a measure rating the capacities of blind children. The children with contact rated blind children higher than those with no contact ($p < .001$). In addition, attitudes become more positive as the number of blind children known increases ($p < .005$). Roeher (1959) used a Likert-type attitude scale similar to the ATDP to measure acceptance of the disabled, and found significant differences between three groups of Ss (over 300

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[1] All Tables are in Appendix B.

Canadian adults) categorized as having minimal, median, or maximal contact with the disabled. The least positive attitudes were found in the minimal contact group and the most positive attitudes among the maximal contact group (all p's $< .05$). Szuhay (1961), using the Children's Picture Sociometric Attitude Scale, found it to correlate +.21 ($p < .05$) with whether or not an elementary school child (N=144) was acquainted with a disabled person.

Among investigators who have failed to find significant differences in ATDP scores between groups reporting different degrees of contact, Siller and Chipman (1965) report no significant relationship between ATDP-O scores and scores on a 3-point scale of contact which combines both number and intensity of contacts in the rating (peripheral contact - moderate contact - intensive contact). Coggin (1964) dichotomized the responses on a 4-point contact scale into "knew no disabled" persons and "had a personal acquaintance with some disabled person." He found no significant chi square difference between these contact groups and dichotomized ATDP-O scores. Human Resources (1962) reported no significant difference between those who reported knowing disabled persons and those who did not, in a sample of 139 eighteen and nineteen year old female industrial employees.

No significant differences were reported in three non-ATDP studies. Cowen et al. (1958) using a questionnaire measuring attitudes toward blindness found that a "contact" group did not differ significantly from a "no contact" group in a sample of 101 adults. Rusalem (1950) reported no significant differences between a "contact" vs. a "non-contact" group in attitudes toward the blind, as measured by an adjective checklist, in a sample of 139 graduate students. Baskin and Herman (1951) found no significant differences in attitudes toward persons with cerebral palsy between a group of students who had "seen" persons with cerebral palsy and a group which had "not seen" persons with cerebral palsy. In addition, Siller and Chipman (1965) found four nonsignificant correlations, ranging from -.11 to -.28, when they correlated a 3-point contact scale (peripheral contact - moderate contact - intensive contact) with their two measures of general acceptance of the disabled, their Feeling Check List, and their Social Distance Scale. The latter two measures summarized scores from eight FCL or SDS scores directed toward different types of disabled persons. All of these measures are described in Chapter 2.

The discrepancies in these results may be due in part to the presence of uncontrolled contaminating factors. Most of the studies described above used a simple "contact" versus "no contact" dichotomy. Even those that used a three or four category scale tended to rely on subjective reports rather than objective criteria. Certainly it would help if extent of contact could be objectively measured. Even in the absence of this, however, it can be concluded that increased contact with disabled persons generally results in more positive attitudes.

The second type of contact study, summarized in Table 40, compares persons with different types of exposure to disabled persons. In the studies discussed earlier, the variable was the reported extent of contact; in the present series of studies the variable is exposure or lack of exposure to an environment containing disabled persons.

A number of studies have been performed in scholastic settings. Genskow and Maglione (1965) studied students at the University of Illinois, which has a special program and facilities for disabled students, as a "familiar" group, and students at the University of Indiana, which has no such program, as an "unfamiliar" group. The "familiar" college students scored significantly higher on the ATDP-O ($p < .005$). However, it is possible that the higher score of the "familiar" university students may have been produced as much by the educational atmosphere of a school with a special program for disabled students as by actual personal contact. Webb (1963) went one step further and reported significant differences in ATDP-O scores among three groups representing different degrees of social contact with the disabled among college students at the University of Illinois mentioned above. Roommates of disabled students were found to be significantly higher scorers than students whose contacts were as "casual acquaintances" ($p < .005$), and also significantly higher scorers than students whose contacts were as "strangers" ($p < .005$). No

significant differences were found between "casual acquaintances" and "strangers." Also in a social-scholastic setting was a study reported by Cohn (1966). Two classes of college students were given the ATDP-A at the beginning and end of the course. One group which had a paraplegic student in the class showed significantly higher ATDP-A change scores than the class with no disabled student (chi square test; $p < .05$).

Another study in a university setting was reported in the original monograph (Yuker et al., 1960). This study was discussed earlier in this chapter to illustrate the ways in which the contact variable may be influenced by particular types of interaction. This study reported that disabled persons who took a course with an instructor who had cerebral palsy scored significantly higher on the ATDP-O at the end of the course than at the beginning, as compared with the control group taught by a non-disabled instructor. Despite the lack of control of the nature and extent of contact in these studies, the findings are consistent in that contact in a scholastic setting produced more positive attitudes toward the disabled. In addition, the Webb study indicates that close personal contacts produce more positive attitudes than casual contacts, and that casual contacts may have little effect on attitudes.

In the study by Knittel (1963), junior and senior high school students were dichotomized on the presence or absence of disabled siblings in their family. Collapsing Knittel's data we arrive at an ATDP-O mean of 71.3 for children (grades 7-12) with disabled siblings and a mean of 76.7 for children with no disabled siblings. Lack of data prevented testing the significance of this difference. Similarly, one of Roeher's groups (1959), consisting of Ss having a disabled member in the family, scored lower than both "median" and "maximum" contact groups though not lower than those with "minimal" contact, on Roeher's Likert scale of attitudes toward the disabled. It would appear that the sibling relationship may affect attitudes in a negative way, possibly as a result of sibling conflict.

Fischbein (1964) used the ATDP-O with a sample of 45 college students. She correlated (biserial r) the yes-no responses to seven questions referring to different types of contact with the disabled and scores on the ATDP. The types of contact included: classmates; members in organizations; teachers, leaders, or supervisors; friends or acquaintances; disabled in family; disabled who have made exceptional adjustments; and disabled who have presented problems to those around them. None of the correlations were significant.

A number of studies have defined contact in terms of professional relationships which involve medical or dental care or some type of rehabilitation training. Two studies were of medical personnel. Moosbruker and Giddon (1965) found no significant differences on the ATDP-A between 94 dental students who had clinical experience with chronically ill and disabled patients and 91 dental students who did not have such experience. However, both groups of dental students had significantly lower ATDP-A mean scores than the ATDP norms for college students ($p < .001$). The contact variable in this study is partly contaminated with specific educational experiences with regard to caring for the disabled. On the other hand, in a study at Human Resources (1962), it was found that contact in the form of a tour of Abilities, Inc. with its employed disabled workers, produced a significantly higher ($p < .05$) ATDP-A score in a group of nursing students when compared with a similar group of nursing students who had not been exposed to the disabled in this setting. Granofsky (1956) also defined contact in a medical setting although his Ss were not medical personnel. Using a Sentence Completion Test to measure attitudes of women toward disabled men, he found no significant differences between volunteer hospital workers and women with no contact. It appears that contact in an employment setting has a more positive effect on attitudes toward the disabled than contact in a medical setting.

Three studies have investigated rehabilitation workers' attitudes toward disabled persons. Felty (1965), using a Guttman scale modification of the ATDP-O, found that both rehabilitation and special education workers in Costa Rica tend to hold more accepting attitudes toward the disabled than employees in other fields. However, Felty also found that the attitudes of

rehabilitation workers were negatively affected by increased contact with the handicapped (partial r=-.38; p < .05). The seven other variables used in the multiple correlation with the ATDP modification are outlined in Chapter 4 under the Socio-Economic Status variable. Bell (1962) compared rehabilitation employees in a hospital with general hospital staff having limited contact with disabled persons and with hospital staff having close personal contact (family or close friend). He found that the rehabilitation workers scored approximately the same on the ATDP-O as the staff having limited contact, and that both the rehabilitation workers and the limited contact group had significantly lower ATDP-O scores than a group of hospital employees who knew disabled persons as family members or as close personal friends. Arnholter (1963), in a study of workers at Goodwill Industries, made a comparison of the mean ATDP-O scores of the rehabilitation and professional staff working with the disabled in an industrial workshop setting and the ATDP-O scores of three other groups: 1) staff in competitive industries working with the non-disabled; 2) non-disabled workers in other competitive industries; and 3) professionals working with the non-disabled in other agencies. The means of the latter three groups were not significantly different from each other. However, supporting Felty's finding, Arnholter reports that the mean ATDP-O scores of the professionals and staff working in an industrial rehabilitation setting were significantly higher (p < .01) than the three non-rehabilitation groups. Felty's and Arnholter's findings do not appear consistent with Bell's finding that hospital rehabilitation employees' scores were as low as persons with limited contact and much lower than persons with close personal contact. However, a comparison of these studies suggests that contact in a medical setting produces less positive effects than contact in either an employment or a social setting. A comparison of Bell's and Arnholter's studies shows that industrial staff working with the disabled scored approximately the same (Mean=87.03) on the ATDP-O as hospital staff having close social contact with the disabled (Mean=87.1). Thus, it seems that employment contacts have as positive an effect on persons working with the disabled as do positive social contacts.

The results cited above pertain to studies of the effects on non-disabled persons of contact with the disabled. Two studies have been conducted in which the effect of contact with other disabled persons was assessed for samples of disabled persons. In one study (Arnholter, 1963) the results indicated that 79 disabled persons who worked with other disabled persons at Goodwill Industries were the least accepting of the disabled on the ATDP-O when compared to four groups of non-disabled Ss (t's not given; p < .01 for all four comparisons). This finding was in opposition to the findings with 248 disabled employees at Abilities reported in the original monograph (Yuker et al. 1960) in which disabled employees scored significantly higher (p <. 001) than 170 college students. Strictly speaking, the Arnholter study does not control the contact variable for the disabled Ss since these Ss were not compared with disabled subjects having less contact with the disabled, but with non-disabled Ss having the same or less contact with the disabled. However, the study does indicate that contact with other disabled persons in a workshop setting has less positive effects on disabled persons than on non-disabled persons. A study conducted at Human Resources (1964), however, provides additional support for a hypothesis that increased contact with the disabled does not affect the attitudes of disabled Ss significantly. No significant correlations were found between any of the three forms of the ATDP and length of employment at Abilities (Form O, r=-.03, N=247; Form A, r=+.02, N=238; Form B, r=+.12, N=164). Nevertheless, further studies in which amount of contact between disabled Ss in various settings is controlled, are needed to clarify whether the effect of contact with other disabled persons is positive, negative or nonsignificant.

Summarizing the data from studies which have defined the type or setting of contact and its effect on attitudes, there is clear evidence that the closer the social and personal contacts with the disabled the greater the acceptance of disabled persons in general. A possible exception to this appears in regard to persons who have a disabled family member; and specifically to children with disabled siblings. It also appears that contact in a medical setting has less positive effects on attitudes than contact in either an employment or a social or personal setting. Contact in an employment setting appears to have as positive an affect as social and personal contact. These

differences may be attributed, at least in part, to differences in the type of information provided by the different types of contact. Contact in an employment setting will probably tend to provide information about the capabilities and adequacies of the disabled person. Contact in a medical or rehabilitation setting, on the other hand, may provide primarily information about inadequacies and disability rather than about ability. This explanation might also account for the findings that increased contact in a rehabilitation setting results in lower ATDP scores; increased contact in this type of setting may serve to provide an increase in information about the very real limitations of disabled persons. Thus it could be postulated that rehabilitation workers start out with quite favorable attitudes, but after extensive contact, they tend to have less favorable attitudes than persons with close personal or social contact with the disabled. The studies investigating the effect of contact with disabled persons on the attitudes of disabled persons suggest tentatively that contact appears to have little effect for disabled Ss.

Specific educational experiences. It may be assumed that certain types of educational experiences can affect an individual's attitude toward disability, as reflected by his responses on an attitude scale. Investigations which have utilized a pre-test – educational experience – post-test format, are the principal concern of this section. Some normative studies in which groups with differing educational experiences are compared on ATDP scores are also reported. The results of all these investigations are summarized in Table 41.

It should be noted that the variables subsumed under specific educational experiences are frequently related to the variable of contact. The pervasive nature of the contact variable often precludes a clear statement of the isolated effects of other factors such as specific educational experiences, and contamination will, therefore, be evident in some of the studies cited.

Among the experiences whose effects have been evaluated are those involving participation in academic courses such as nursing and rehabilitation. Three ATDP studies using non-disabled samples (Meyer, 1963; Papcum, 1964; Wyrick, 1964) employed a pre- and post-test design with an interpolated experience. Meyer (1963) administered the ATDP-O to 29 nursing students before and after the first year of a nursing curriculum and found no significant difference between pre- and post-curriculum ATDP-O scores. Meyer did report, however, that an experimental group of 29 Ss who participated both in the curriculum and in group counseling sessions, showed ATDP score increases (analysis of covariance). One hypothesis suggested to Meyer by these results was that the interpolated experience of counseling may have allayed personal anxieties related to success in the nursing curriculum. This may in turn have contributed to a significant increase in accepting attitudes toward the disabled. This interpretation is consonant with the results of other studies which showed an inverse relationship between anxiety and ATDP scores (Chapter 5).

In a similar study, Papcum (1964) administered the ATDP-O to 35 non-disabled nursing students prior to and immediately after a course in rehabilitation. The data from this study were analyzed at Human Resources and did not disclose significant differences before and after the rehabilitation experience. However, these t values were conservative estimates as Papcum did not report correlations for her data to use in computing the t value.

The final study of this type was conducted by Wyrick (1964) who compared ATDP-O scores of four experimental groups of students before and after a course in somatopsychology. Two control groups of students who did not take the course were also given the test-retest of the ATDP-O. After completion of the course by the experimental groups, Wyrick found higher ATDP-O scores in both experimental and control groups. Significant score increases were observed, however, in only two of the four experimental groups, i.e., physical therapy students and students of undecided academic major scored significantly higher after the course in somatopsychology. The score increases noted in the experimental group of occupational therapy and graduate students and in the control groups were not statistically significant, although in the predicted direction.

Other studies (Maglione, 1965; Wilson, 1963) entailed a single administration of the ATDP to selected groups of non-disabled Ss. Comparisons were made between the ATDP scores of rehabilitation workers or nursing students and other Ss in unrelated fields. Maglione (1965) found that significantly higher ATDP-O scores were achieved by graduate rehabilitation students than by a class of undergraduate students. Interpretation of this result is confounded, however, by possible contamination by other factors, such as age, grade level, and contact.

A study by Wilson (1963) provided scores of 145 nurses and 52 oilfield workers. A t-test comparison of the mean ATDP-O scores performed at Human Resources revealed a significant difference at the .05 level, with nurses scoring higher. Other t-tests, however, between the nurses' scores and those of 263 other Ss who were attending various academic courses in non-health-related disciplines, did not produce significant differences. These results suggest that experience in a nursing curriculum is not necessarily more conducive to accepting attitudes toward the disabled than experience in other academic disciplines. Level of education is probably a more potent factor in the results of the comparison of nurses and oilfield workers than any differences in specific educational experiences. In addition, in comparing the educational experiences of nurses with other academic groups, the factors of contact and differential attitudes existing prior to the educational experience must be considered as factors which were not controlled in this study.

Two studies (McCourt, 1963; Felty, 1965) using modifications of the ATDP with non-disabled Ss found higher scores among professional hospital personnel and those employed in rehabilitation and special education than among non-health oriented occupational groups. Using a 4-point response scale and a 19-item modification of the ATDP-O, McCourt (1963) observed significant differences between professional and non-professional hospital personnel working with disabled and geriatric patients. Staff members with professional occupational status were found to be more accepting of the disabled. Although recognizing the possible relevance of other influences, McCourt interprets these observed differences as a function of the educational programs specific to professional and non-professional occupational attainment. He suggests that professional training is oriented toward acceptance of the worth and dignity of the patient, whereas non-professional training programs are primarily skill-oriented.

In a cross-cultural study in Costa Rica, Felty (1965) adapted the ATDP-O according to Guttman procedures and revised the scale's scoring system so that the ATDP scores of this study are not directly comparable to those of other studies using the conventional scoring system. Felty observed significant mean score differences between combined rehabilitation and special education personnel, and "low income" groups; and also observed significant differences between combined rehabilitation and special education personnel, and business and professional groups. In both instances, the rehabilitation and special education groups scored significantly higher than other subject groups. No significant differences were found between the ATDP scores of rehabilitation workers and those of special educators. These results suggest that training in rehabilitation and special education tends to be related to increased acceptance of the disabled, as judged by ATDP scores.

Two studies using the ATDP, which have a somewhat peripheral relationship to the variable under consideration can be cited here. Tutaj (1964) studied 30 non-disabled high school students and found no significant relationship between ATDP-O scores and membership in the Junior Red Cross. It is, of course, questionable whether membership in an organization of this kind constitutes a specific educational experience. The experience may be one of learning ancillary hospital duties, such as rolling bandages, and may or may not entail contact with hospitalized patients.

Using a non-disabled college population, Fischbein (1964) administered the ATDP-O and a questionnaire designed to assess vocational interests and extent of contact with the disabled. She then correlated academic major (dichotomized into education majors versus others) and ATDP-O scores and obtained a biserial correlation coefficient significant at the .01 level. However,

a subsequent t-test analysis at Human Resources found no significant differences between the ATDP-O scores of education and other academic majors.

Of the three non-ATDP studies reported (Whiteman & Lukoff, 1962b; Warren, Turner, & Brody, 1964; Auvenshine, 1962), two entailed the evaluation of the effects of an interpolated experience while the third measured attitudes in a single administration. Using a scale to measure attitudes toward blindness, Whiteman and Lukoff (1962b) studied the effect of types of information on components of attitudes toward blindness. They found that certain "communications" produce significant differences in measures of such component variables as pity-sympathy and protective attitudes toward the blind. However, these "communications" were observed to have no significant effect on scales measuring other attitude components, such as willingness to interact with the blind, statements about the emotional attributes of blind persons, and evaluations of blindness as uniquely frustrating among physical handicaps (statistics not given). Whiteman and Lukoff state further that dimensions of attitudes which are pervasive and which revolve around personal interaction are more difficult to alter than are more superficial stereotyped attitudes.

Using the Attitude Toward Exceptional Children scale, Warren, Turner, and Brody (1964) found that a combination of lectures, discussion, and institutional tours increased subject preferences for teaching or working with some types of disabled persons, and decreased preferences with regard to other types of disability. Subjects were 80 college students enrolled in an integrated psychology-education-sociology program. Increased preferences were noted for working with the visually handicapped, while significantly decreased preferences were observed for working with the brain-injured (chi square analysis; differences significant beyond .01 level). Since the institutional tours involved contact with the disabled in the work and play areas, the effects of the lectures and discussions on subject preferences cannot be evaluated apart from the effects of contact.

Finally, a study by Auvenshine (1962) used the Attitude Toward Severely Disabled College Students scale. An analysis of variance among four academic divisions resulted in an F value significant at the .01 level. He reports that the major difference occurred between the mean score of male education majors and the mean score of the other majors combined. In addition, Auvenshine found that female college students majoring in education, arts, and science were more favorable in attitude toward the disabled than were home economics majors (F reported; $p < .05$). However, Auvenshine feels that these findings are inconclusive due to small N's in some of the academic divisions.

The results cited in this section are notably inconsistent. It is suggested that educational experiences might, in some instances, have a favorable effect on attitudes toward the disabled. However, individual subjects often appear to be differentially affected by the same educational experience. Individual subject differences, in terms of baseline scores, appear to be highly relevant to a clearer delineation of the factors operating in the test-retest design frequently employed.

It is of interest to note that approximately half of the studies cited indicate that specific educational experiences are not significantly related to attitudes toward the disabled, while the balance suggest that there is a significant relationship. Most of the studies included resist further clarification because of the contaminating effects of other factors, such as grade level and contact with the disabled. Furthermore, since these investigations are not directly comparable in terms of research design, sample characteristics, and statistical treatment of the data, an overall view of the studies in this section suggests that future experimentation should employ more rigid control measures, so that more adequate conclusions may be drawn regarding the effects of specific educational experience on attitudes toward the disabled.

Hospitalization. One of the hypotheses discussed in Chapters 1 and 5 is that attitudes toward the disabled in a disabled population are essentially reflections of self-acceptance and are

more a function of basic personality variables than of the effects of the environment. On the basis of this hypothesis, one might predict that ATDP scores should be relatively independent of the length of time a disabled person spends in the hospital. To test this hypothesis, Abilities, Inc. employees were divided into two groups according to the length of time spent in a hospital (Yuker, Block, & Campbell, 1960). One group had spent less than one year, while the other group had spent 13 months or longer in a hospital. The data relating to this prediction, yield a chi square of .21, which fails to reach significance at the .05 level. The hypothesis that attitudes toward disabled persons are unrelated to length of hospitalization was confirmed in this study. Despite this, in view of the limited data available the present authors are reluctant to conclude at this time that there is no relationship.

Behavioral Variables

One reason for the development of the Attitude Toward Disabled Persons test, as indicated earlier, was to see whether an attitudinal measure could be developed which would have high correlations with behavior. One goal was to develop a measure which would permit reliable predictions of the behavior of disabled individuals. In view of the fact that the available population of disabled persons were all employees at Abilities, Inc., the behavioral variables used in studies conducted at Human Resources tended to be measures of industrial performance. Other investigators have correlated the ATDP with rehabilitation performance. This will be discussed later in this chapter.

Work performance. Studies of Abilities' employees reported in the original monograph (Yuker, Block, & Campbell, 1960) found that there were significant chi square differences on a number of industrial variables between disabled persons who obtained high ATDP scores and those who obtained low scores (see Table 42). Thus, it has been found that high scorers were more apt than low scorers to be rated by their supervisors as "outstanding" or "excellent" on quality of performance, rather than "average" or "poor." Similarly, it was found that high scorers were more apt to receive supervisory ratings of "outstanding" or "excellent" on their quantity of production than employees with lower scores. Thus, the data indicate that the supervisors were more pleased with the work performance of those who obtained high scores on ATDP than with persons who obtained low scores. It should be noted that supervisory personnel who made the ratings did not have access to the ATDP test data.

Table 42 also shows that there was a significant negative relationship (chi square) between ATDP scores and absenteeism from work. Disabled persons who obtained high ATDP scores tended to have fewer absences than those with low scores. No relationship, however, was found between ATDP scores and lateness in reporting for work.

Wada (1964) too, found that there were significant differences in ATDP scores between groups with varying industrial performance. She found that a group of disabled persons at an industrial workshop who were considered by their supervisors to be employable had higher ATDP scores than a non-employable group. The critical ratio was significant at the .05 level.

In contrast to the above findings, in which significance tests were used, correlational studies done by Human Resources have not supported the relationship between the ATDP and industrial performance of disabled persons (see Table 43). Block (1962) found the correlations between ATDP-O and either quality or quantity of job performance, as determined by supervisors' rankings of Abilities' employees, to be not significant.

In a 1964 Human Resources study, no significant correlations were found between any of the three forms of the ATDP and various measures of work productivity. As Table 43 shows, the ATDP was correlated with three different scores derived from the Merit Rating Series (Industrial Psychology, Inc., 1953): Total Productivity score, Quantity of Productivity score, and

Quality of Productivity score, as rated by supervisory personnel. The ATDP forms were also correlated directly with supervisor ratings from Abilities' personnel records. Finally, ATDP forms were correlated with supervisor's rankings of employees' quantity and quality of job performance. None of these correlations was significant.

As indicated in Table 43, no significant correlations were found between any of the three forms of the ATDP and number of excused absences, number of unexcused absences, or number of times late.

Although no correlation was found between ATDP scores and measures of industrial performance, Block (1962) found some indication that Ss who fell above the median on both need for achievement (McClelland TAT measure) and the ATDP, performed at a higher level, industrially, than Ss falling below the median on both measures. The t value between Ss high on both measures and Ss low on both measures on the performance measure of absenteeism was 2.25 ($p < .05$). The t value between high and low Ss in quantity of production was significant at the .10 level (two-tailed test). The t between high and low Ss on quality of production was not significant.

In conclusion, although tests for significant differences indicate that the ATDP does discriminate significantly between groups which are high and low in industrial performance, the correlation between individual scores and industrial performance is not significantly different from zero. This suggests that the ATDP should not be used alone as a predictor of the industrial performance of disabled persons. However, the results of the different studies in conjunction with the findings of Block (1962) suggest that the ATDP may prove useful in a battery of predictive measures of industrial performance.

Two investigators have attempted to determine the relationship of scores on the ATDP and measures of work performance of non-disabled persons who work with the disabled. Gilliland (1965) found that ATDP-O scores correlated +.19 with scores on the Performance of Rehabilitation Aspects of Nursing Care scale, a measure of the performance of nurses in rehabilitation. The correlation coefficient was significant at the .01 level for the sample of 198 registered nurses and 179 practical nurses. Meyer (1963), however, did not find significant increases (analysis of covariance used) reflected in a measure of nursing performance (Performance Rating Scale) in a group of 29 nurses. A 25 week group counseling program which covered personal and nursing problems significantly improved attitudes toward the disabled, but the change in attitudes was not reflected in nursing performance. However, this measure of nursing performance may not particularly reflect aspects of nursing pertaining to successful relationships in working with the disabled.

Job satisfaction. In the initial monograph (Yuker, Block, & Campbell, 1960) it was reported that Abilities employees with high ATDP-O scores tended to be more job satisfied than those employees with lower ATDP scores. The instrument used to measure job satisfaction was a 20-item Likert-type scale designed at Human Resources to measure attitudes toward work. In the initial study on 247 Abilities' employees, a chi-square value of 18.11 was obtained and this was significant beyond the .001 level.

In later studies, correlations were calculated rather than chi-square. The results of these later studies which are indicated in Table 44 have been somewhat less positive than those originally reported. That is, significant results were obtained in only some of the cases.

In a study by Block (1962) scores on the ATDP-O were correlated with scores on the SRA Employee Inventory (Science Research Associates, 1952) using a scoring key devised by Block. Block reported significant correlations ($p < .05$) between ATDP-O scores and both the total score on the Employee Inventory and the number of "satisfiers" and number of "dissatisfiers" as defined by Herzberg, Mausner and Snyderman (1959). The correlations for a sample of 81 Abilities employees ranged from +.25 to +.29.

In 1964 a number of studies were conducted at Human Resources in which ATDP scores were related to measures developed at Human Resources (Block & Yuker, 1964a; Block, Yuker, Campbell, & Melvin, 1964) of either "satisfiers" or "dissatisfiers." In six such studies correlations ranging from +.10 to +.25 were obtained. Because of the large sample size three of the correlations were significant at the .01 level.

Whereas one would predict there would be a relationship between ATDP scores and job satisfaction in a disabled population, this same prediction would not be made for non-disabled students. There seemed to be no reason to postulate that for a non-disabled group ATDP scores would be related to job satisfaction, unless one would consider that ATDP scores reflect a general level of adjustment. In 1962 a series of studies were conducted in which ATDP scores were correlated with scores on the Job Satisfaction scale on a sample of non-disabled college students. In three studies, correlations ranging from +.17 to +.46 were obtained, with only the correlation of +.46 being significant at the .01 level.

Rehabilitation performance. Only two investigators have studied the use of the ATDP as a predictor of the rehabilitation behavior of disabled Ss. Ehrle and Pauza (1964) found no significant differences (t=1.77) in ATDP-O scores between two groups of disabled clients at a rehabilitation center, a self-discharged (N=24) and a center-discharged (N=23) group. The self-discharged were assumed to be less successfully adjusted to disability and it was hypothesized that they would, therefore, score more poorly on the ATDP. The ATDP had been administered at the admission of the Ss to the center.

Peterson (1964) found no significant correlation (r=+.04) between the ATDP-O and client performance (N=94 disabled Ss) in a vocational rehabilitation program. However, a combination of counselor predictions and ATDP-O scores were significantly related to performance in the program. The multiple correlation for the 94 Ss was +.55, significant at the .001 level. The addition of the ATDP improved the correlation value of the counselor predictions which was +.42 ($p < .001$) alone. Again, it appears that the ATDP holds less promise as a predictor of industrial or rehabilitation performance of disabled persons when used alone than when used in conjunction with other predictors.

Conclusions

This chapter has been concerned both with the relationship of ATDP scores to various types of past experiences and with the relationship of the ATDP to present performance in work or rehabilitation.

The effect of past contact with disabled persons was examined in terms of both extent of contact and specific types of contact. The studies of extent of contact strongly suggest that, in general, increased contact with disabled persons is related to more positive attitudes. The studies which define contact in a particular setting also support the hypothesis that, in general, contact results in more positive attitudes. However, certain types of contact appear to produce more positive attitudes than others. More positive attitudes were found to be related to close personal contact with disabled persons, social contact, and contact in an educational or employment setting. On the other hand, less positive attitudes were found to be related to extent of contact in a medical or rehabilitation setting and possibly to contact with a disabled sibling.

The data relating to the effects of specific educational experiences on attitudes toward the disabled were difficult to compare and evaluate. About half the studies indicate that information and professional training courses pertaining to the disabled are related to more positive attitudes, while the rest indicate no relationship. In most studies, however, other variables were present, thereby confounding the effect of the education experience.

With respect to disabled Ss, the few studies reported no relationship between attitudes toward other disabled persons and the experiential variables of extent of contact with other disabled persons or the extent of past hospitalization experienced. These findings, though limited, would tend to support an hypothesis that attitudes toward the disabled in disabled Ss are more related to personality and self-concept factors than to specific experiences.

Turning to behavioral variables, it was found that while significant differences in ATDP scores were found between groups categorized as high and low in various measures of industrial performance, the correlations of individual ATDP scores and industrial performance were not significant. The authors believe, therefore, that the ATDP should not be used alone as a predictor of individual industrial performance although it may contribute to prediction in a battery of measures.

Disabled Ss who score high on the ATDP tend to score higher on measures of job satisfaction although the significant correlations found are quite low, while the relationship of the ATDP and job satisfaction for non-disabled Ss is inconclusive. The findings with disabled Ss provide tentative support for an hypothesis that attitudes toward other disabled persons reflect self-concept or adjustment if job satisfaction is considered one partial indicator of adjustment.

The evidence with regard to the use of the ATDP as a predictor of rehabilitation performance or success again indicates that the ATDP is inadequate as a single predictor of individual performance, but may prove a useful contributor in a battery of predictive measures.

With regard to the relation of attitudes toward the disabled and the behavioral correlates of non-disabled Ss, only nursing performance has been studied. The results are inconclusive but suggest little value for the ATDP as a predictor of nursing performance.

Chapter 8

SUMMARY AND CONCLUSIONS

In the past thirty-five years there have been many studies of attitudes toward disabled persons. These studies have made use of many different measuring instruments. Some were survey instruments that did not yield specific scores. Others were what we have termed "simple scored" scales, while some were attitude scales utilizing Likert or Thurstone procedures.

Some instruments were used to measure the attitudes of the non-disabled toward disabled persons; others were used to measure the attitudes of disabled persons toward their disability or to provide a general measure of their adjustment. Many instruments concentrated on measuring attitudes toward persons with specific disabilities such as blindness, deafness or an orthopedic disability.

Few of the instruments that were reviewed in Chapter 2 of this monograph could be considered to be methodologically sophisticated. Further, the adequacy of many of the instruments was difficult to assess since data were not provided regarding their reliability or validity.

In view of the limitations of these attempts to measure attitudes toward disabled persons, the research staff of Human Resources decided to attempt the development of a more adequate instrument, using Likert scale format. The scale was intended to be one which could be used with both disabled and non-disabled persons. Furthermore, for research purposes, it was necessary that it be relatively short, easy to administer, score and interpret. The Attitude Toward Disabled Persons scale (ATDP) was the result of these efforts.

Three forms of the ATDP have been developed. The original, Form O, has 20 items. Two later forms, Forms A and B, have 30 items each. Each form of the scale presents the items in a Likert format with six response categories ranging from, "I Agree Very Much" through "I Disagree Very Much." The scale takes 10 to 15 minutes to administer, and is relatively easy to score. Some studies have indicated that in addition to the usual weighted scoring procedure for Likert scales, it is possible to score the ATDP by counting the positive and negative scores only and arriving at results which correlate highly with the regular scoring procedure. Norms have been developed for the regular scoring procedure but not for the method of alternate scoring.

The simplest interpretation of ATDP scores is one which utilizes the operational definition of the items used in the scale. Since the items are presumed to reflect perceived differences between disabled and non-disabled persons, this concept can be used in the interpretation. A score that is high relative to other scores would indicate that the respondent perceives disabled persons as being relatively similar to non-disabled persons, whereas a score that is low indicates that disabled persons are perceived as being different. Since many of the items on the ATDP suggest that where a difference is perceived, it has negative connotations, a score may be interpreted as reflecting the fact that the responent perceives disabled persons not only as being different, but also as to some degree inferior or disadvantaged. A less stimulus-bound interpretation of the scores might be that the non-disabled person who perceives the disabled person as being different and to some extent inferior, may be considered to be prejudiced toward disabled persons. Since there is a significant difference between the scores for disabled and non-disabled persons, and since the scores may be interpreted somewhat differently, separate norms are provided. The evidence also indicates the need for separate norms for males and females, and these have been provided.

The authors note that responses to single items should not be interpreted. While the

ceptance of physical disability in either disabled or non-disabled adults. For persons who have completed their education, there seems to be an increase in acceptance of physically disabled persons with an increase in education for both disabled and non-disabled persons. On the other hand, the relationship appears to be curvilinear for subjects who have not completed their education. That is, attitudes toward disabled persons tend to be less favorable with increasing grade level through the elementary grades, but they then become more favorable with additional schooling so that the relationship becomes similar to that found with adult subjects. Differences between males and females have been found in a sufficiently large number of studies that it can be concluded that females generally score higher on the ATDP than do males, in both disabled and non-disabled samples. Scores on the ATDP appear to be unrelated to measures of degree of physical disability, the type of physical disability, or the age at which a person becomes disabled. While some data are available, they are insufficient to draw conclusions about the relationships between attitudes toward physically disabled persons and the subject's marital status, his socio-economic status, his nationality, his race, or whether he lives in an urban or rural environment.

The data indicate that there is tentative evidence that persons with positive attitudes toward the disabled score lower in measures of need for aggression or expression of hostility than those with negative attitudes. There is also evidence that acceptance of disabled persons is positively related to a need for intraception or insightfulness. There is little evidence that scores on the ATDP are related to any of the other basic needs listed by Murray (1938). There is evidence that non-disabled persons who tend to be relatively self-accepting score higher on the ATDP. However, the assumption that the ATDP may be interpreted as reflecting the self-concept of disabled persons was not generally supported by the limited studies reviewed. Further research in this important area is strongly suggested. Persons who are accepting of the disabled tend to get lower scores on measures of anxiety. While all of the results are in this general direction, many of the reported results are not statistically significant. In general, there is little evidence that attitudes toward disabled persons are correlated with measures of interest or with measures of intelligence.

Attitudes as measured by the ATDP tend to be correlated with other measures of generalized attitudes toward the disabled, but correlate less highly with measures of attitudes toward persons with specific disabilities. The data to date indicate that acceptance of physically disabled persons is positively related to acceptance of people who are "different." This has been found to be the case with reference to members of such groups as the mentally ill, the aged, and members of various ethnic groups. The relationship between scores on the ATDP and measures of authoritarianism justify the tentative conclusion that acceptance of disabled persons is somewhat greater in persons who score low on measures of authoritarianism. There is also tentative evidence that persons who are more accepting of the disabled are those who have an intellectual as opposed to a pragmatic orientation toward life. No relationship has been found between ATDP scores and measures of dogmatism.

Data are presented to support the conclusions that increased equal-status contact with disabled persons tends to be related to more positive attitudes as measured by ATDP scores. Positive attitudes were found to be particularly related to a close personal contact with disabled persons, to social contact, and to contact in an educational or employment setting. On the other hand, less positive attitudes were found to be related to extent of contact in a medical or rehabilitation setting, and possibly to contact with a disabled sibling. The above results apply to non-disabled persons. With disabled persons, the evidence indicates that their attitudes toward disabled persons may be more related to personality and motivational factors than to specific experiences.

Disabled persons with high ATDP scores tend, in general, to perform more satisfactorily on the job than persons with lower scores. They score higher on measures of job satisfaction although the correlation coefficients are quite low. The evidence, thus far, indicates that the ATDP should not be used alone as a measure of either industrial performance or rehabilitation performance of disabled individuals, but may be a useful contributor to a predictive battery.

The utilization of the Attitude Toward Disabled Persons scale in a wide variety of industrial, academic and social investigations has indicated its potential for furthering knowledge of attitudes toward physically disabled persons. In a broader sense this scale may be considered part of

scores can be used to compare groups of individuals, they should not be used alone to make even tentative judgments or predictions about individuals. However, evidence presented in Chapter 7 indicates that the ATDP may have value when used as a contributor in a battery of measures for predicting the industrial and rehabilitation performance of disabled persons. It is suggested that those who might wish to use the ATDP for predictive purposes, must determine the scale's utility in their specific setting by evaluating its contribution to the variance of the results of a battery of employment or rehabilitation predictors.

Many studies have been made of the reliability of the ATDP, and they indicate that the scale has an average degree of reliability. While each of the forms has a relatively high degree of reliability, correlations among the three forms are somewhat lower. Consequently, it should not be assumed that the three forms of the scale are completely equivalent to one another.

In attempting to assess the validity of the ATDP, the method of construct validity has been used. The evidence for the scale's validity is presented throughout the monograph and particularly in Chapters 4 through 7. These chapters reported on the relationship between ATDP scores and a number of specific variables.

The ATDP has been found to be relatively not fakeable. It has also been found that neither social desirability nor acquiescent response set accounts for significant portions of the variance in ATDP scores.

In the original construction of the scale two types of items were used: "characteristics" items, which indicate that disabled people have characteristics that make them either similar to or different from the non-disabled; and "treatment" items, which indicate that disabled persons should be treated either the same as or different from non-disabled persons. Factor analyses have yielded a number of factors, some of them similar to the two "built in" factors. It was concluded that attempts to construct factorially pure measures should continue. Such measures might yield results which would shed additional light on attitudes toward the disabled. Nevertheless, the authors feel that the ATDP will continue to be useful in research requiring an adequately reliable measure of the "general factor" of attitudes toward the disabled which is easy to administer and score.

Although the ATDP was designed to measure attitudes toward disabled persons in general, a number of investigators feel that they might elicit more meaningful responses by measuring attitudes toward specific disability groups such as persons in wheelchairs, amputees, blind persons, etc. Some investigators have substituted other nouns for "disabled" in the wording of the ATDP items. Among the terms that have been substituted are handicapped, wheelchair, nervous breakdown, heart condition, mentally ill, and alcoholic. However, the present authors believe that a measure that uses a general reference group can be quite useful, and the data presented throughout this monograph tend to support this contention. One specific asset of items referring to a broad and somewhat ambiguous reference group is that they are more likely to elicit negative or prejudicial attitudes than specifically worded items. The ATDP may, in large part, be measuring attitudes toward people who are different, rather than attitudes toward persons who are different in a specific (physical) way.

In attempting to summarize the relationships between other variables and attitudes toward disabled persons, it is interesting to note that, in a number of cases, investigators have reported contradictory findings regarding specific relationships. In examining the data in detail, however, it was found that many of these contradictions could be resolved. In relatively few of the cases did several investigators report diametrically opposite results. Rather, the tendency was for one investigator to report finding a relationship while another investigator failed to find such a relationship. When relationships were reported, the great majority, if not all of the significant relationships, were in the same direction. Therefore, some general conclusions have been drawn, particularly in those cases where they seem to be in accord with current psychological theory.

With regard to the relationship between demographic variables and attitudes toward the disabled, the following conclusions have been drawn. There is no relationship between age and ac-

the social psychological literature of attitudes in general, and of attitudes toward minority groups in particular. The scale has also been used in investigations of attitude change, in correlational studies relating demographic factors, and in studies of personality correlates of attitude.

The ATDP scale seems to have served as a catalyst by stimulating a number of studies of attitudes toward disabled persons and their correlates. Meaningful data have been gathered and a number of conclusions have been reached. It is difficult to indicate what the next step will be. Certainly much more research is needed and is likely to be forthcoming. Whether the ATDP will be used in this research or whether it will be superceded by newer or better instruments cannot be foreseen. Regardless of the measuring instrument that is used, the present monograph has raised many unresolved questions which should be investigated and answered.

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APPENDIX

APPENDIX A

ATDP - FORM O

No._____ 3-9/10/57

ATDP SCALE

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3 or -1, -2, -3: depending on how you feel in each case.

+3: I AGREE VERY MUCH
+2: I AGREE PRETTY MUCH
+1: I AGREE A LITTLE
-1: I DISAGREE A LITTLE
-2: I DISAGREE PRETTY MUCH
-3: I DISAGREE VERY MUCH

_____ 1. Parents of disabled children should be less strict than other parents.

_____ 2. Physically disabled persons are just as intelligent as non-disabled ones.

_____ 3. Disabled people are usually easier to get along with than other people.

_____ 4. Most disabled people feel sorry for themselves.

_____ 5. Disabled people are the same as anyone else.

_____ 6. There shouldn't be special schools for disabled children.

_____ 7. It would be best for disabled persons to live and work in special communities.

_____ 8. It is up to the government to take care of disabled persons.

_____ 9. Most disabled people worry a great deal.

_____ 10. Disabled people should not be expected to meet the same standards as non-disabled people.

_____ 11. Disabled people are as happy as non-disabled ones.

_____ 12. Severely disabled people are no harder to get along with than those with minor disabilities.

_____ 13. It is almost impossible for a disabled person to lead a normal life.

_____ 14. You should not expect too much from disabled people.

_____ 15. Disabled people tend to keep to themselves much of the time.

_____ 16. Disabled people are more easily upset than non-disabled people.

_____ 17. Disabled persons cannot have a normal social life.

_____ 18. Most disabled people feel that they are not as good as other people.

_____ 19. You have to be careful of what you say when you are with disabled people.

_____ 20. Disabled people are often grouchy.

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CODE #_____ ATDP SCALE ANSWER SHEET FORM A

Use this answer sheet to indicate how much you agree or disagree with each of the statements about disabled people on the attached list. Put an "X" through the appropriate number from +3 to -3 depending on how you feel in each case.

+3: I AGREE VERY MUCH
+2: I AGREE PRETTY MUCH
+1: I AGREE A LITTLE
-1: I DISAGREE A LITTLE
-2: I DISAGREE PRETTY MUCH
-3: I DISAGREE VERY MUCH

PLEASE ANSWER EVERY ITEM

(1)	-3	-2	-1	+1	+2	+3	(16)	-3	-2	-1	+1	+2	+3
(2)	-3	-2	-1	+1	+2	+3	(17)	-3	-2	-1	+1	+2	+3
(3)	-3	-2	-1	+1	+2	+3	(18)	-3	-2	-1	+1	+2	+3
(4)	-3	-2	-1	+1	+2	+3	(19)	-3	-2	-1	+1	+2	+3
(5)	-3	-2	-1	+1	+2	+3	(20)	-3	-2	-1	+1	+2	+3
(6)	-3	-2	-1	+1	+2	+3	(21)	-3	-2	-1	+1	+2	+3
(7)	-3	-2	-1	+1	+2	+3	(22)	-3	-2	-1	+1	+2	+3
(8)	-3	-2	-1	+1	+2	+3	(23)	-3	-2	-1	+1	+2	+3
(9)	-3	-2	-1	+1	+2	+3	(24)	-3	-2	-1	+1	+2	+3
(10)	-3	-2	-1	+1	+2	+3	(25)	-3	-2	-1	+1	+2	+3
(11)	-3	-2	-1	+1	+2	+3	(26)	-3	-2	-1	+1	+2	+3
(12)	-3	-2	-1	+1	+2	+3	(27)	-3	-2	-1	+1	+2	+3
(13)	-3	-2	-1	+1	+2	+3	(28)	-3	-2	-1	+1	+2	+3
(14)	-3	-2	-1	+1	+2	+3	(29)	-3	-2	-1	+1	+2	+3
(15)	-3	-2	-1	+1	+2	+3	(30)	-3	-2	-1	+1	+2	+3

FORM A 12/20/64

ATDP SCALE

READ EACH STATEMENT AND PUT AN "X" IN THE APPROPRIATE COLUMN ON THE ANSWER SHEET. DO NOT MAKE ANY MARKS ON THE QUESTION SHEETS.

PLEASE ANSWER EVERY QUESTION

---

1. Disabled people are often unfriendly.
2. Disabled people should not have to compete for jobs with physically normal persons.
3. Disabled people are more emotional than other people.
4. Most disabled persons are more self-conscious than other people.
5. We should expect just as much from disabled as from non-disabled persons.
6. Disabled workers cannot be as successful as other workers.
7. Disabled people usually do not make much of a contribution to society.
8. Most non-disabled people would not want to marry anyone who is physically disabled.
9. Disabled people show as much enthusiasm as other people.
10. Disabled persons are usually more sensitive than other people.
11. Severely disabled persons are usually untidy.
12. Most disabled people feel that they are as good as other people.
13. The driving test given to a disabled person should be more severe than the one given to the non-disabled.
14. Disabled people are usually sociable.
15. Disabled persons usually are not as conscientious as physically normal persons.
16. Severely disabled persons probably worry more about their health than those who have minor disabilities.
17. Most disabled persons are not dissatisfied with themselves.
18. There are more misfits among disabled persons than among non-disabled persons.

ATDP SCALE

19. Most disabled persons do not get discouraged easily.

20. Most disabled persons resent physically normal people.

21. Disabled children should compete with physically normal children.

22. Most disabled persons can take care of themselves.

23. It would be best if disabled persons would live and work with non-disabled persons.

24. Most severely disabled people are just as ambitious as physically normal persons.

25. Disabled people are just as self-confident as other people.

26. Most disabled persons want more affection and praise than other people.

27. Physically disabled persons are often less intelligent than non-disabled ones.

28. Most disabled persons are different from non-disabled people.

29. Disabled persons don't want any more sympathy than other people.

30. The way disabled people act is irritating.

ATDP - FORM B

CODE # _____ ATDP SCALE ANSWER SHEET FORM B

Use this answer sheet to indicate how much you agree or disagree with each of the statements about disabled people on the attached list. Put an "X" through the appropriate number from +3 to -3 depending on how you feel in each case.

+3: I AGREE VERY MUCH
+2: I AGREE PRETTY MUCH
+1: I AGREE A LITTLE
-1: I DISAGREE A LITTLE
-2: I DISAGREE PRETTY MUCH
-3: I DISAGREE VERY MUCH

PLEASE ANSWER EVERY ITEM

(1)	-3	-2	-1	+1	+2	+3	(16)	-3	-2	-1	+1	+2	+3
(2)	-3	-2	-1	+1	+2	+3	(17)	-3	-2	-1	+1	+2	+3
(3)	-3	-2	-1	+1	+2	+3	(18)	-3	-2	-1	+1	+2	+3
(4)	-3	-2	-1	+1	+2	+3	(19)	-3	-2	-1	+1	+2	+3
(5)	-3	-2	-1	+1	+2	+3	(20)	-3	-2	-1	+1	+2	+3
(6)	-3	-2	-1	+1	+2	+3	(21)	-3	-2	-1	+1	+2	+3
(7)	-3	-2	-1	+1	+2	+3	(22)	-3	-2	-1	+1	+2	+3
(8)	-3	-2	-1	+1	+2	+3	(23)	-3	-2	-1	+1	+2	+3
(9)	-3	-2	-1	+1	+2	+3	(24)	-3	-2	-1	+1	+2	+3
(10)	-3	-2	-1	+1	+2	+3	(25)	-3	-2	-1	+1	+2	+3
(11)	-3	-2	-1	+1	+2	+3	(26)	-3	-2	-1	+1	+2	+3
(12)	-3	-2	-1	+1	+2	+3	(27)	-3	-2	-1	+1	+2	+3
(13)	-3	-2	-1	+1	+2	+3	(28)	-3	-2	-1	+1	+2	+3
(14)	-3	-2	-1	+1	+2	+3	(29)	-3	-2	-1	+1	+2	+3
(15)	-3	-2	-1	+1	+2	+3	(30)	-3	-2	-1	+1	+2	+3

FORM B 12/20/64

ATDP SCALE

READ EACH STATEMENT AND PUT AN "X" IN THE APPROPRIATE COLUMN ON THE ANSWER SHEET. DO NOT MAKE ANY MARKS ON THE QUESTION SHEETS.

PLEASE ANSWER EVERY QUESTION

---

1. Disabled persons are usually friendly.
2. People who are disabled should not have to pay income taxes.
3. Disabled people are no more emotional than other people.
4. Disabled persons can have a normal social life.
5. Most physically disabled persons have a chip on their shoulder.
6. Disabled workers can be as successful as other workers.
7. Very few disabled persons are ashamed of their disabilities.
8. Most people feel uncomfortable when they associate with disabled people.
9. Disabled people show less enthusiasm than non-disabled people.
10. Disabled people do not become upset any more easily than non-disabled people.
11. Disabled people are often less aggressive than normal people.
12. Most disabled persons get married and have children.
13. Most disabled persons do not worry any more than anyone else.
14. Employers should not be allowed to fire disabled employees.
15. Disabled people are not as happy as non-disabled ones.
16. Severely disabled people are harder to get along with than are those with minor disabilities.
17. Most disabled people expect special treatment.
18. Disabled persons should not expect to lead normal lives.
19. Most disabled people tend to get discouraged easily.
20. The worst thing that could happen to a person would be for him to be very severely injured.

ATDP SCALE

21. Disabled children should not have to compete with non-disabled children.

22. Most disabled people do not feel sorry for themselves.

23. Most disabled people prefer to work with other disabled people.

24. Most severely disabled persons are not as ambitious as other people.

25. Disabled persons are not as self-confident as physically normal persons.

26. Most disabled persons don't want more affection and praise than other people.

27. It would be best if a disabled person would marry another disabled person.

28. Most disabled people do not need special attention.

29. Disabled persons want sympathy more than other people.

30. Most physically disabled persons have different personalities than normal persons.

Table 10

ATDP Reliability Data
(Stability: test-retest)

Study	ATDP Form	N	Disabled/ Non-disabled	Time Interval	r	p
Human Resources, 1959	O	30	ND	5 weeks	.66	.01
	O	37	ND	5 weeks	.76	.01
	O	45	ND	5 weeks	.70	.01
Yuker, Block, & Campbell, 1960	O	132	D	18 months	.67	.01
Human Resources, 1960	O	24	ND	5 weeks	.84	.01
Knittel, 1963	O	58	ND	2 weeks	.89	.01
Yuker, Block, & Campbell, 1960	O	76	D	4 months	.70	.01
Phipps, 1963	O	75	ND	2 weeks	.80	.01
Human Resources, 1966	A	84	ND	2 weeks	.78	.01
Human Resources, 1962	B	28	ND	4 months	.71	.01
	B	81	ND	5 weeks	.83	.01

Table 11

ATDP Reliability Data
(Split-half method)

Reference	ATDP Form	N	Disabled/ Non-disabled	r	p
Yuker, Block, & Campbell, 1960	O	248	D	.76	.01
	O	170	ND	.78	.01
Siller & Chipman, 1964b	O	245	ND	.75	.01
	O	553	ND	.83	.01
	O	75	ND	.85	.01
	O	50	ND	.84	.01
Human Resources, 1962	A	72	ND	.73	.01
	A	53	ND	.77	.01
	A	53	ND	.74	.01
	A	57	ND	.89	.01
Human Resources, 1964	A	296	D	.82	.01
	A	110	ND	.84	.01
	A	72	ND	.78	.01
Human Resources, 1962	B	50	ND	.79	.01
	B	42	ND	.72	.01
	B	57	ND	.84	.01
America Fore, 1962	B	143	ND	.82	.01
Human Resources, 1964	B	194	D	.87	.01
	B	139	ND	.81	.01
	B	50	ND	.80	.01

Table 12

ATDP Reliability Data
(Equivalent forms)

Reference	ATDP Forms	N	Disabled/ Non-disabled	r	p
Human Resources, 1962	O-A	132	ND	.69	.01
	O-A	72	ND	.67	.01
Human Resources, 1964	O-A	234	D	.61	.01
Human Resources, 1962	O-B	81	ND	.57	.01
	O-B	40	ND	.76	.01
	O-B	40	ND	.77	.01
Human Resources, 1964	O-B	157	D	.60	.01
Human Resources, 1962	A-B	84	ND	.72	.01
	A-B	57	ND	.83	.01
Human Resources, 1964	A-B	154	D	.60	.01

Table 13

ATDP Reliability Data
(Stability-equivalence)

Reference	ATDP Forms	N	Disabled/ Non-disabled	Time Interval	r	p
Human Resources, 1966	O-A	38	ND	2 weeks	.62	.01
Human Resources, 1962	O-B	81	ND	6 weeks	.83	.01
Human Resources, 1962	A-B	58	ND	6 weeks	.41	.01
	A-B	40	ND	5 months	.73	.01
	A-B	31	ND	5 months	.76	.01

Table 14

Relationship between Age and Attitude; Non-disabled Ss

Study	N	Sample	Attitude Measures	Statistic
Auvenshine, 1962	159	Male coll. stud. (6 age groups)	Att. toward Severely Dis. Coll. Stud. Scale	F=3.22** (between age groups); older males high
	153	Female coll.stud. (6 age groups)	" " "	F N.A.; rep. N.S.
Bell, 1962	110	Hosp. empl. & rehab. wkrs.	ATDP-O	Stat. N.A.; rep. N.S. rel.
Gilliland, 1965	377	R.N.'s & P.N.'s	ATDP-O	r N.A.; rep. N.S.
Horowitz, Rees & Horowitz, 1965	20	6th grade stud.	Attitudes toward deaf scale	Stat. N.A.; rep. coll. stud. higher than 6th grade & H.S. stud.* Mothers higher than 6th grade.*
	20	H.S. stud.	" " "	
	20	Coll. stud.	" " "	
	20	P.T.A. mothers	" " "	
Lukoff & Whiteman, 1963	N.A.	H.S. & coll. stud., & adults	Attitude to Blindness scale	Stat. & sig. N.A.; younger Ss high
Siller, 1963, 1964	235	Jr. H.S. stud.	ATDP-O	r=-.16**
	229	Sr. H.S. stud.	ATDP-O	r= +.04 N.S.
	283	Coll. stud.	ATDP-O	Stat. N.A.; coll. Ss sig. higher than Jr. & Sr. H.S.
Siller & Chipman, 1964	480	Jr. & Sr. H.S. stud.	ATDP-O	t= 4.03***; older group high (computed at Human Resources)
	628	Coll. stud. & female adults	ATDP-O	
Siller & Chipman, 1965	65	Adults & adoles.	ATDP-O	r= -.12 N.S.
Simmons, 1949	N.A.	N.A.	Questionnaire on opinions about blindness	Sig. neg. r; values N.A.
Wilson, 1963	38	Jr. & Sr. nursing stud.	ATDP-O	r= -.334*

*p <.05, **p <.01, ***p <.001, N.S. - not significant, sig. - significant
N.A. - not available, rel. - relationship, rep. - author reports

Table 15

Relationship between Age & Attitude; Disabled Ss

Study	N	Sample	Attitude Measure	Statistic
Bauman, 1958	2210	Blind Ss	Attitudes re Blindness subscale of Emotional Factors Inventory	r=+.18*; rep. N.S.
Human Resources, 1960	253	Dis. Abil. empl. (age dichot. at median)	ATDP-O	x^2= 2.69 N.S.
	253	Dis. Abil. empl. (dichot. age 50)	ATDP-O	x^2= 4.39*; younger high
Human Resources, 1964	247	Dis. Abil. empl.	ATDP-O	r=-.10 N.S.
	238	Dis. Abil. empl.	ATDP-A	r=+.01 N.S.
	156	Dis. Abil. empl.	ATDP-B	r=+.09 N.S.
Larkin, 1962	235	Blind Adoles.	Attitudes toward blindness scale	Stat. N.A.; rep. older adoles. sig. higher
Wada, 1964	132	Dis. in indust. workshop	ATDP-B	Stat. N.A.; rep. N.S.

*p <.05, N.S. - not significant, sig. - significant
N.A. - not available, rel. - relationship, rep. - author reports, dichot. - dichotomized

Table 16

Relationship between Sex and ATDP; Non-disabled Ss

Study	N	Sample	ATDP Form	Statistic
Bell, 1962	110	Hosp. empl.	0	x^2 N.S.; value N.A.
Chesler, 1965	320	Coll. & H.S. stud.	0	t=2.54*; females high
Coggin, 1964	68	Coll. stud.	0	x^2=1.52 N.S.
Felty, 1965	267	Costa Rican rehab. wkrs. & other occupations	0	F=1.559 N.S.
Ferketic, 1964	169	Coll. stud.	Expanded ATDP-O with 20 addl. items	t=2.8**; females high
Fischbein, 1964	45	Coll. stud.	0	t=2.20*; females high (t done at H.R.)
Freed, 1964	303	Coll. stud.	0	t N.S.; value N.A.
			Shortened by 2 items	
	521	V.A. hosp. empl.	0	t***; value N.A.; rep. females high
			Shortened by 2 items	
Knittel, 1963	18	Jr. & Sr. H.S. stud.	0	t=.368 N.S.
Maglione, 1965	49	Coll. stud.	0	t=2.07*;females high
Siller, 1964	283	Coll. stud.	0	sig. r N.S.; value N.A.
	229	H.S. stud.	0	r_{pb}=+.21**; females high
	235	Jr. H.S. stud.	0	r_{pb}=+.08 N.S.
Siller & Chipman,1965	65	Adults & Adoles.	0	r_{pb}=+.16 N.S.
Yuker, Block & Campbell, 1960	429	Coll. stud.	0	x^2=5.54*; females high

*p <.05, **p <01, ***p <.001 N.S. - not significant, N.A. - not available, sig. - significant, rep. - author reports

Table 17

Relationship between Sex and Attitude; Disabled Ss

Study	N	Sample	Attitude Measure	Statistic
Arnholter, 1963	79	Goodwill Indust. wkrs.	ATDP-O	Stat. N.S.; N.A.
Blanton & Nunnally, 1964	173	Deaf children & adoles.	Semantic Differential Scale	Stat. N.A.; rep. deaf girls more pos. toward blind, deaf, & self*
Human Resources, 1964	240	Abil. empl.	ATDP-O	t=.73 N.S.
	231	Abil. empl.	ATDP-A	t=2.09* (females high)
	154	Abil. empl.	ATDP-B	t=2.26* (females high)
Larkin, 1962	235	Blind adoles.	Attitude toward blindness scale	t N.S.; value N.A.
Moed, Wight, Feshbach, & Sandry, 1963	154	Children - dis. & non-dis.	Children's Seashore House Picture Story Test	Stat. & sig. N.A.; both dis. & non-dis. girls more pos. att. toward disability than boys
Wada, 1964	132	Indust. workshop empl.	ATDP-B	Value N.S.; N.A.
Yuker, Block & Campbell, 1960	254	Abil. empl.	ATDP-O	x^2=5.20* (females high)

*p .05, N.S. - not significant, sig. - significant
N.A. - not available, pos. - positive, att. - attitudes

Table 18

Relationship between Educational Grade Level of Adults Who Have Completed Schooling and Attitudes

Study	N	Sample	Attitude Measure	Statistic
		NON-DISABLED		
Bell, 1962	110	Hosp. empl. (dichot. educational level)	ATDP-O	$\underline{x}^2$ N.S.; value N.A.
Lukoff & Whiteman, 1963	N.A.	Middle and low income adults	Attitudes to Blindness: Integration subscale	Stat. N.A.; rep. pos. $\underline{r}$
Roeher, 1959	over 300	Canadian adults	Likert Scale of Attitude Toward Disabled	Stat. N.A.; high educ. level greater acceptance
Simmons, 1949	N.A.		Opinions about Blindness Questionnaire	Stat. N.A.; high educ. level more favorable
Tutaj, 1964	30	Mothers	ATDP-O	$\underline{x}^2$ = 1.28 N.S.
		DISABLED		
Human Resources, 1964	238 164 247	Abil. empl. Abil. empl. Abil. empl.	ATDP-A ATDP-B ATDP-O	$\underline{r}$=+.04 N.S. $\underline{r}$=-.03 N.S. $\underline{r}$=+.18**
Yuker, Block & Campbell, 1960	167	Abil. empl. (three educ. levels)	ATDP-O	$\underline{x}^2$=2.05 N.S.
Wada, 1964	132	Workers	ATDP-B	Stat. N.A.; rep. sig. rel.

*$\underline{p}$ <.05, **$\underline{p}$ <.01, N.S. - not significant, sig. - significant
N.A. - not available, pos. - positive, rep. - author reports, dichot. - dichotomized, rel. - relationship

Table 19

Relationship between Nature and Extent of Disability and Attitude: Disabled Ss

Study	N	Sample	Attitude Measure	Statistic
Bauman, 1954	352	Blind Ss	Emotional Factor Inventory: Total Score	t and p N.A.; rep. Ss without useful vision better adjusted than those with some useful vision.
	352	" "	Attitude to Blindness Subscale	t=1.19 N.S.; between absolute blindness and some degree of vision. (t done at Human Resources)
Braen & Weiner, 1965	26	Orthopedically handicapped adoles.	Fielding Story Completion Test Questionnaire developed by investigators	t and p N.A.; rep. N.S. diff. between moderate and severe dis. Ss
Human Resources, 1964	307	Visual Dis. - Ranging from normal to blind	ATDP-O	7 of 26 ts sig.: 2 ts* 5 ts**
	291	" "	ATDP-A	
	191	" "	ATDP-B	
	305	Structural impairment of hands - 4 categories ranging from normal to both hands	ATDP-O	5 of 18 ts sig.: 2 ts* 3 ts**
	289	" "	ATDP-A	
	191	" "	ATDP-B	
	307	Functional impairment of hands - 4 categories ranging from normal to both hands	ATDP-O	3 of 18 ts sig.: 1 t* 2 ts**
	291	" "	ATDP-A	
	191	" "	ATDP-B	
	306	Number of Disabilities ranging from none to 3 Dis.[a]	ATDP-O	No ts sig.
	290	" "	ATDP-A	
	190	" "	ATDP-B	

[a]Samples contain 1/5 to 1/6 non-disabled.
*$p < .05$, **$p < .01$, N.S. - not significant, sig. - significant, N.A. - not available, rep. - author reports

(Table continued on next page)

Table 19 (Continued)

Study	N	Sample	Attitude Measure	Statistic
Human Resources, 1964	307	Speech Disabilities - 4 categories, ranging from Normal to Mute[a]	ATDP-O	10 of 18 ts sig. 1t* 9t**
	291	" "	ATDP-A	
	191	" "	ATDP-B	
	307	Auditory Disabilities - 5 categories, ranging from Normal to Deaf[a]	ATDP-O	2 of 30 ts sig. 2ts*
	291	" "	ATDP-A	
	191	" "	ATDP-B	
	307	Subject to attack - 5 categories, ranging from not subject to frequent-acute attacks[a]	ATDP-O	4 of 30 ts sig. 3ts* 1t**
	291	" "	ATDP-A	
	191	" "	ATDP-B	
	307	Respiratory Disabilities vs. all others[a]	ATDP-O	t=.33 N.S.
	291	" "	ATDP-A	t=.58 N.S.
	191	" "	ATDP-B	t=.34 N.S.
	238	Progressive Disability vs. Non-progressive	ATDP-O	t=1.91 N.S.
	229	" "	ATDP-A	t=.58 N.S.
	153	" "	ATDP-B	t=.37 N.S.
	307	Heart Condition vs. No Heart Condition[a]	ATDP-O	t=2.33* (No Heart Condition sig. higher)
	291	" "	ATDP-A	t=.38 N.S.
	191	" "	ATDP-B	t=.13 N.S.

[a]Samples contain 1/5 to 1/6 non-disabled.
*$p < .05$, **$p < .01$, N.S. - not significant, sig. - significant

(Table continued on next page)

Table 19 (continued)

Study	N	Sample	Attitude Measure	Statistic
Human Resources, 1964	307	Continuing Medication - 3 categories, ranging from not-essential to essential.[a]	ATDP-O	
	291	" "	ATDP-A	No ts sig.
	191	" "	ATDP-B	
	240	Neurological Disorders vs. Non-neurological	ATDP-O	t= .66 N.S.
	230	" "	ATDP-A	t= 1.83 N.S.
	154	" "	ATDP-B	t= .27 N.S.
	240	Locomotor Disability - 4 categories, ranging from unaided normal to aided wheelchair	ATDP-O	
	231	" "	ATDP-A	3 of 18 ts sig. 2 ts* 1 t*
	154	" "	ATDP-B	
	240	Visibility of Disability - 5 categories, ranging from not visible to apparent-unpleasant	ATDP-O	
	231	" "	ATDP-A	4 of 30 ts sig. 3 ts* 1 t**
	154	" "	ATDP-B	
Larkin, 1962	235	Blind adoles.	Attitude toward blindness scale	Data N.A.; rep. extent of blindness not influential in determining attitude.

[a]Samples contain 1/5 to 1/6 non-disabled.
*$p < .05$, **$p < .01$, N.S. - not significant, sig. - significant, N.A. - not available, rep. - author reports

(Table continued on next page)

Table 19 (continued)

Study	N	Sample	Attitude Measure	Statistic
Wada, 1964	132	Empl. of indust. wkshp.	ATDP-B	Data N.A.; rep. sig. rel. between various types of disabilities
Yuker, Block & Campbell, 1962	245	Abil. empl.	ATDP-O	$\underline{x}^2$ N.A.; N.S. between attitude and 6 Dis. types
Yuker, Block & Campbell, 1960	50	Abil. empl., Cardiac-Vacular vs. Pulmonary vs. Arthritis disability	ATDP-O	$\underline{x}^2$= .91 N.S.
	67	Abil. empl., Neurological vs. Non-neurological disorder	ATDP-O	$\underline{x}^2$=.00 N.S.
	224	Abil. empl., Sensory vs. Non-sensory disability	ATDP-O	$\underline{x}^2$=.69 N.S.
	95	Abil. empl., Upper vs. Lower extremity involvement	ATDP-O	$\underline{x}^2$=.21 N.S.
	109	Abil. empl., number of extremities involved	ATDP-O	$\underline{x}^2$=.20 N.S.
	113	Abil. empl., number of disabilities	ATDP-O	$\underline{x}^2$=.06 N.S.
	153	Abil. empl., number of defects	ATDP-O	$\underline{x}^2$=.09 N.S.

[a]Samples contain 1/5 to 1/6 non-disabled.
*$\underline{p}$ < .05, **$\underline{p}$ < .01, N.S. - not significant, sig. - significant, N.A. - not available
rep. - author reports, rel. - relationship

Table 20

Relationship Between Age at Onset of Disability & Attitude; Disabled Ss

Study	N	Sample	Attitude Measure	Statistic
Arnholter, 1963	79	Dis. wkrs. of an indust. wkshop.	ATDP-O	Value N.A.; rep. N.S. diff. between congenital and acquired dis.
Bauman, 1954	314	Blind Ss	Emotional Factors Inventory	t= 4.1**. Recent loss of vision, poorer adjustment scores.
Human Resources 1964	230	Abil. empl.	ATDP-O	r=-.12 N.S.
	222	Abil. empl.	ATDP-A	r=+.03 N.S.
	150	Abil. empl.	ATDP-B	r=+.12 N.S.
Larkin, 1962	235	Blind adoles.	Adjustment to blindness rating scale	N.A.; rep. no conclusions re: age at onset and attitude
Wada, 1964	132	Dis. indust. wkrs.	ATDP-B	N.A.; acquired dis. group greater acceptance*
Yuker, Block & Campbell, 1960	209	Abil. empl.	ATDP-O	x^2 = 1.70 N.S.

*p <.05, **p <.01, N.S. - not significant, sig. - significant
N.A. - not available, rep. - author reports

Table 21

Relationship between Aggression and Attitude

NON-DISABLED

Study	N	Sample	Aggression Measure	Attitude Measure	Statistic
Human Resources, 1962	66	Coll. stud.	Edwards Personal Preference Schedule	ATDP-B	r=-.21 N.S.
Siller, 1964	283	Coll. stud.	Gough's Adjective Check List	ATDP-O	r=-.13*
	283	Coll. stud.	Zaks-Walters Scale of Aggression	ATDP-O	r=-.12 N.S.
	229	H.S. stud.	Zaks-Walters Scale of Aggression	ATDP-O	r=-.34**
Siller & Chipman, 1965	65	Adults and adoles.	Elizur- 1949 Rorschach Hostility Scale- (Scoring modified by Siller & Chipman)	ATDP-O	r=-.08 N.S.
	65	Adults & adoles.	TAT- Aggression Index (Scored by a variant of the Mussen & Naylor 1954 method)	ATDP-O	r=-.03 N.S.
Siller & Sternlicht, 1960	150	Coll. stud.	Zaks-Walters Scale of Aggression	ATDP-O	t used; value N.A.; rep. sig. at .02, high ATDP group scored lowest on aggression
	150	Coll. stud.	Hostility Scale (Buss & Durkee)	ATDP-O	t used; value N.A.; rep. sig. at .02, high ATDP group scored lowest on aggression
Swingle, 1962	75	Coll. stud.	Temperament Self Rating Scale (Subscale)	ATDP-O	r=-.25*

DISABLED

Human Resources 1964	187	Abil. empl.[a]	Gough Adjective Check List	ATDP-A	r=-.15*
	192	Abil. empl.[a]	Gough Adjective Check List	ATDP-B	r=-19*
	192	Abil. empl.[a]	Gough Adjective Check List	ATDP-O	r=-.09 N.S.

[a]Sample contained 1/5-1/6 non-disabled.
*p <.05, **p <.01, N.S. - not significant, sig. - significant, N.A. - not available, rep. - author reports

Table 22

Relationship between Nurturance, Affiliation, Affect & Attitude

Study	N	Sample	Motivational Variable	Motivational Measure	Attitude Measure	Statistic
Felty, 1965	267	Non-dis. employed adult Costa Ricans	Nurturance	Benevolence Scale of Gordon's Survey of Interpersonal Values	ATDP-O (modified by Guttman scaling)	Partial r=+.06 N.S.
Human Resources, 1962	66	Non-dis. coll. stud.	Nurturance	Edwards Personal Preference Schedule	ATDP-B	r=+.01 N.S.
	66	Non-dis. coll. stud.	Affiliation	Edwards Personal Preference Schedule	ATDP-B	r=+.11 N.S.
Human Resources, 1964	187	Dis. Abil. empl.	Affiliation	Gough Adjective Check List	ATDP-A	r=+.15*
	187	Dis. Abil. empl.	Affiliation	Gough Adjective Check List	ATDP-B	r=+.10 N.S.
	192	Dis. Abil. empl.	Affiliation	Gough Adjective Check List	ATDP-O	r=+.05 N.S.
Kaiser & Moosbruker,1960	24	Non-dis. coll. stud.	Affect	Galvanic Skin Response	ATDP-O	t=16.7***; low ATDP scorers more emotional response
Siller, 1964	283	Non-dis. coll. stud.	Nurturance	Gough Adjective Check List	ATDP-O	r=+.22**
	283	Non-dis. coll. stud.	Affiliation	Gough Adjective Check List	ATDP-O	r=+.18**
Siller & Chipman, 1965	65	Non-dis. adults & adoles.	Affect	Interviewer Ratings of "Affective Investment"	ATDP-O	r=-.04 N.S.
Siller & Sternlicht, 1960	150	Non-dis. coll. stud.	Affect	Cervin's Rigidity and Emotional Responsiveness Scale	ATDP-O	t used; value N.A.; rep. sig. at .02; high N.A.
Swingle, 1962	75	Non-dis. male coll. stud.	Affect	Cerebrotonic subscale of Temperament Self-Rating Scale	ATDP-O	r=-.14 N.S.
	75	Non-dis. male coll. stud.	Affiliation	Viscerotonic subscale of Temperament Self-Rating Scale	ATDP-O	r=+.02 N.S.

*p<.05, **p<.01, ***p<.001, N.S. - not significant, sig. - significant
N.A. - not available, rep. - author reports

Table 23

Relationship between Need for Achievement and Attitude

NON-DISABLED

Study	N	Sample	Need for Achievement Measure	Attitude Measure	Statistic
Felty, 1965	287	Employed adult Costa Ricans	Recognition Scale of the Gordon Survey of Interpersonal Values	ATDP-O (modified and rescored by Guttman scaling)	Partial r=+.012 N.S.
Human Resources, 1962	66	Coll. stud.	Edwards Personal Preference Schedule	ATDP-B	r=-.13 N.S.
Siller, 1964	283	Coll. stud.	Gough Adjective Check List	ATDP-O	r=+.08 N.S.
			DISABLED		
Block, 1960	81	Abil. empl.	Mc Clelland's TAT need for achievement measure	ATDP-O	r=+.04 N.S.
Human Resources,1964	187	Abil. empl.	Gough Adjective Check List	ATDP-A	r=+.18*
	187	Abil. empl.	Gough Adjective Check List	ATDP-B	r=+.11 N.S.
	187	Abil. empl.	Gough Adjective Check List	ATDP-O	r=+.07 N.S.

*p <.05, N.S., - not significant

Table 24

Relationship between Dominance, Deference, and Succorance or Dependency, and Attitude

Study	N	Sample	Motivational Variable	Motivational Measure	Attitude Measure	Statistic
Felty, 1965	267	Non-dis. employed adult Costa Ricans	Dominance	Leadership Scale of Gordon's Survey of Interpersonal Values	ATDP-O modified and rescored by Guttman scaling	Partial r=-.125**
Human Resources, 1962	66	Non-dis. coll. stud.	Deference	Edwards Personal Preference Schedule	ATDP-B	r=+.21 N.S.
	66	Non-dis. coll. stud.	Dominance	Edwards Personal Preference Schedule	ATDP-B	r=+.06 N.S.
	66	Non-dis. coll. stud.	Succorance	Edwards Personal Preference Schedule	ATDP-B	r=-.14 N.S.
Human Resources, 1964	192	Dis. Abil. Empl.	Succorance	Gough Adjective Check List	ATDP-O	r=-.06 N.S.
	187	Dis. Abil. Empl.	Succorance	Gough Adjective Check List	ATDP-A	r=-.11 N.S.
	187	Dis. Abil. Empl.	Succorance	Gough Adjective Check List	ATDP-B	r=-.12 N.S.
Siller, 1964	283	Non-dis. coll. stud.	Dominance	Gough Adjective Check List	ATDP-O	r=+.06 N.S.
	283	Non-dis. coll. stud.	Succorance	Gough Adjective Check List	ATDP-O	r=-.13*
Siller & Chipman, 1965	65	Non-dis. adults and adolescents	Dependency	Kagan & Mussen's Dependency Index	ATDP-O	r=+.15 N.S.

*p <.05, ** p<.025, N.S. - not significant, sig. - significant

Table 25

Relationship between Endurance, Order, Change, Heterosexuality, Autonomy and Exhibition and Attitude

Study	N	Sample	Motivational Variable	Motivational Measure	Attitude Measure	Statistic
Human Resources, 1962	66	Non-dis. coll. stud.	Autonomy	Edwards Personal Preference Schedule	ATDP-B	r= -.04 N.S.
			Change	Edwards Personal Preference Schedule	ATDP-B	r= -.07 N.S.
			Endurance	Edwards Personal Preference Schedule	ATDP-B	r= +.09 N.S.
			Exhibition	Edwards Personal Preference Schedule	ATDP-B	r= -.08 N.S.
			Hetero-sexuality	Edwards Personal Preference Schedule	ATDP-B	r= -.17 N.S.
			Order	Edwards Personal Preference Schedule	ATDP-B	r= +.17 N.S.
Human Resources, 1964	192	Dis. Abil. empl.	Endurance	Gough Adjective Check List	ATDP-O	r= +.10 N.S.
	187	Dis. Abil. empl.	Endurance	Gough Adjective Check List	ATDP-A	r= +.13 N.S.
			Endurance	Gough Adjective Check List	ATDP-B	r= +.10 N.S.
Siller, 1964	283	Non-dis. coll. stud.	Autonomy	Gough Adjective Check List	ATDP-O	r= -.01 N.S.
			Change			r= +.09 N.S.
			Endurance			r= +.03 N.S.
			Exhibition			r= +.06 N.S.
			Hetero-sexuality			r= +.09 N.S.

N.S. - not significant

Table 26

Relationship between Self-Concept and Attitude

NON-DISABLED

Study	N	Sample	Self-Concept Measure	Attitude Measure	Statistic
Eisler, 1964	88	Coll. stud.	Semantic Differential Rating Scale for Assessing Stability of Self-Concept	ATDP-O	r=-.19
Epstein & Shontz, 1961	49	Coll. stud.	Secord and Jourard Body-Cathexis test	Attitude Toward Physical Disability test	r N.A.; rep. sig. positive relationship
Human Resources, 1962	81	Coll. stud.	Semantic Differential	ATDP-B	r=+.27*
	66	" "	Edwards Personal Preference Schedule: (Abasement Subscale)	ATDP-B	r=-.05 N.S.
Siller, 1964	283	" "	Barron: Ego Strength	ATDP-O	r=+.14*
	229	H.S. stud.	" " "	"	r=+.16*
	235	Jr. H.S. stud.	" " "	"	r=+.14*
	229	H.S. stud.	Shippee-Blum: Self Acceptance	"	r=-.01 N.S.
	283	Coll. stud.	Gough's ACL: Self Acceptance	"	r=+.08 N.S.
	283	" "	" " Self Criticism	"	r=-.18**
	229	H.S. stud.	Maslow's Security-Insecurity Inventory	"	r=+.02 N.S.
	283	Coll. stud.	" " " "	"	r=-.17*
Siller & Chipman, 1965	65	Adults & adoles.	Rorschach: Permeability of Ego Boundaries	"	r=-.28*
	65	"	Rorschach: Impermeability of Ego Boundaries	"	r=+.05 N.S.

*$p < .05$, **$p < .01$, N.S. - not significant, sig. - significant, N.A. - not available, rep. - author reports

(Table continued on next page)

Table 26 (continued)

Study	N	Sample	Self-Concept Measure	Attitude Measure	Statistic
			NON-DISABLED		
Siller & Sternlicht, 1960	150	Coll. stud.	Barron's Measure of Ego Strength	ATDP-O	t used; value N.A.; high ATDP scorers high on ego strength**
	150	" "	Luft's Psychological Control Questionnaire	"	t used; value N.A.
Steingisser, 1954	90	" "	Jervis Q-sort	Attitude to blindness scale	N.A.; rep. that low self-concept Ss had more unfavorable attitudes
Tutaj, 1964	30	H.S. girls	Maslow's Security-Insecurity Inventory	ATDP-O	r=-.40*
			DISABLED		
Human Resources, 1964	282	Abil. empl.	Semantic Differential	ATDP-O	r=+.03 N.S.
	273	" "	" "	ATDP-A	r=-.02 N.S.
	177	" "	" "	ATDP-B	r=+.05 N.S.
Whiteman and Lukoff, 1962b	500	Blind Ss	Self-Evaluation Index	Evaluation of Blindness Index	Data N.A.; rep. positive relationship

*p<.05, **p<.01, N.S. - not significant, sig. - significant, N.A. - not available
rep. - author reports

Table 27

Relationship between Anxiety and Attitude Toward Disabled

Study	N	Sample	Anxiety Measure	Attitude Measure	Statistic
Arnholter, 1963	79	Dis. Goodwill empl.	Incomplete Sentence Blank anxiety measure	ATDP-O	Data N.A.; group lowest on ATDP was highest in anxiety
	197	Non-dis. professionals & indust. wkrs.	" " "	" "	
Eisler, 1964	88	Coll. stud.	IPAT	ATDP-O	r=-.03 N.S.
Human Resources, 1960	41	Coll. stud.	Cattell Self-Analysis Inventory (IPAT): Total	" "	r=-.12 N.S.
			Overt	" "	r=-.05 N.S.
			Covert	" "	r=-.23 N.S.
Human Resources, 1962	88	Coll. stud.	IPAT: Total	ATDP-O	r=-.21 N.S.
	53	" "	"	" "	r=-.18 N.S.
	38	" "	"	" "	r=-.11 N.S.
	42	" "	"	" "	r=-.13 N.S.
	50	" "	"	" "	r=-.04 N.S.
	42	" "	"	" "	r=-.53**
	41	" "	IPAT: Total	ATDP-O (Prior to Rescore)	r= -.22 N.S.
			Overt		r=-.19 N.S.
			Covert		r=-.18 N.S.
			IPAT: Total	ATDP-O (Rescore)[a]	r=-.35*
			Overt		r=-.18 N.S.
			Covert		r=-.21 N.S.

[a]ATDP 6-point Likert range of -3 to +3 was dichotomized into simple +1 or -1 scoring.
*p<.05, **p <.01, ***p <.001, N.S. - not significant, N.A. - not available

(Table continued on next page)

Table 27 (continued)

Study	N	Sample	Anxiety Measure	Attitude Measure	Statistic
Kaiser & Moosbruker, 1960	24	Coll. stud.	Galvanic Skin Response to pictures of dis.	ATDP-O	t= 16.7***; low ATDP scorers had more extreme GSR
Siller, 1964	235	Jr. H.S. stud.	Welsh Anxiety Scale	" "	r=-.24**
	229	H.S. stud.	" " "	" "	r=-.15*
	283	Coll. stud.	" " "	" "	r=-.14*
	229	H.S. stud.	Zuckerman Affect Adjective Check List	" "	r=-.03 N.S.
	283	Coll. stud.	" "	" "	r=-.15*
Siller & Chipman, 1965	65	Adults & adoles.	Elizur Anxiety Scale (modified) - Rorschach	" "	r=-.08 N.S.
	65	" "	Schwartz Castration Anxiety Scale (TAT)	" "	r=-.05 N.S.
Whiteman & Lukoff, 1960b & 1962b	109	Adults	Selected Items from Taylor Manifest Anxiety Scale	Attitudes to Blindness Scale: Emotional Traits sub-scale	Stat. N.A.; Sighted persons with more anxiety tended to view emotional life of blind people as more unpleasant and "abnormal" than those of lesser anxiety.
Yuker, Block & Campbell, 1960	180	Abil. empl.	Weiss-Plutchik Anxiety Scale	ATDP-O	x^2=8.99**; high anxiety Ss had low ATDP scores

*p <.05, **p <.01, ***p <.001, N.S. - not significant, N.A. - not available

Table 28

Relationship between Measures of Overall Attitudes Toward the Disabled and ATDP; Non-disabled Ss

Study	N	Sample	Attitude Measure	Form of ATDP	Statistic
Knittel, 1963	50	8th grade stud.	Auvenshine's Attitude Toward Severely Disabled Students	O	r= +.64**
	58	11th & 12th grade stud.	Auvenshine's Attitude Toward Severely Disabled Students	O	r= +.52**
Kramer, 1965	50	Males & females	Variability of distance setting of "disabled" photos	B	r= -.30*
	50	Males & females	Variability of distance setting of "non-dis." photos	B	r= .00 N.S.
Siller, 1964	235	Jr. H.S. stud.	Social Distance Scale	O	r= -.16*
	229	H.S. stud.			r= -.34**
	283	Coll.stud.			r= -.30**
	235	Jr. H.S. stud.	Feeling Check List	O	r= +.19**
	229	H.S. stud.			r= +.32**
	283	Coll. stud.			r= +.21**
Siller & Chipman, 1965	65	Adults & late adoles.	General Acceptance #1	O	r= +.55**
			General Acceptance #2	O	r= +.62**
			Social Distance Scale[a]	O	r= +.30*
			Feeling Check List[a]	O	r= +.44**
Szuhay, 1961	25	Mothers	Attitude Toward the Physically Disabled Scale Form A	A	r=-.72***
	25	Mothers	Attitude Toward the Physically Disabled Scale Form B	A	r=-.66***

*p <.05, **p <.01, ***p <.001, N.S. - not significant

[a]Revised and expanded.

Table 29

Relationship between Specific Factors in Attitudes Toward the Disabled and ATDP; Non-disabled Ss

Study	N	Sample	Attitude Measure	Form of ATDP	Statistic
Siller & Chipman, 1965	65	Adults & late adoles.	Aversive statements: Negative Attribution	O	r=-.31*
			Aversive statements: Threatening to self	O	r=-.37*
			Aversive statements: Fear of Social Ostracism	O	r=-.32*
			Degree of Dissonant Attitudes	O	r=-.39*
			Aversive statements in specific areas of: Functional Limitations, Aesthetic-Sexual Qualities, Aesthetic-Physical Qualities, Suffering through Identification, Strained Interaction, Negative Atypicality, Burden of Doing for the Disabled, and Unfavorable Experience.	O	r ranged from -.21 to +.04 N.S.
			Nonaversive statements: Benevolence	O	r=+.06 N.S.
			Negative Feeling toward Disabled	O	r=-.48**
			Positive Feelings toward Disabled	O	r=+.21 N.S.

*p < .05, **p < .01, N.S. - not significant

Table 30

Relationship between Attitude toward Specific Disability Types and ATDP; Non-disabled Ss

Study	N	Sample	Attitude Measure	Form of ATDP	Statistic
Siller and Chipman, 1965	65	Adults & late adoles.	FCL:[a] Amputation	O	r= +.31*
			FCL: Skin Disorder	O	r= +.36**
			FCL: Deafness	O	r= +.10 N.S.
			FCL: Paralysis	O	r= +.21 N.S.
			FCL: Cerebral Palsy	O	r= +.31*
			FCL: Blindness	O	r= +.34**
			FCL: Body Deformations	O	r= +.34**
			FCL: Muscular Dystrophy	O	r= +.23 N.S.
			SDS:[a] Amputation	O	r= +.26*
			SDS: Skin Disorder	O	r= +.28*
			SDS: Deafness	O	r= +.22 N.S.
			SDS: Paralysis	O	r= +.17 N.S.
			SDS: Cerebral Palsy	O	r= +.13 N.S.
			SDS: Blindness	O	r= +.29*
			SDS: Body Deformations	O	r= +.31*
			SDS: Muscular Dystrophy	O	r= +.12 N.S.

*$p < .05$, **$p < .01$, N.S. - not significant,

[a]revised and expanded.

Table 31

Relationship between Opinions About Mental Illness Scale and ATDP

Study	N	Sample	OMI Subscale	Form of ATDP	Statistic
Human Resources, 1964	121	Primarily dis. Abil. empl.[a]	Authoritarianism	O	r= -.16 N.S.
			"	A	r= -.17 N.S.
			"	B	r= -.25 **
			Benevolence	O	r= +.28**
			"	A	r= +.25**
			"	B	r= +.31**
			Mental Hygiene Ideology	O	r= +.19*
			" "	A	r= +.22*
			" "	B	r= +.26**
			Social Restrictiveness	O	r= +.29**
			" "	A	r= +.22*
			" "	B	r= +.34**
			Interpersonal Etiology	O	r= -.05 N.S.
			" "	A	r= +.02 N.S.
			" "	B	r= -.14 N.S.

[a] This sample contained 1/5 to 1/6 non-disabled Ss.

*p <.05, **p <.01, ***p <.001, N.S. - not significant

Table 32

Relationship between Attitudes toward Old People and ATDP

NON-DISABLED Ss

Study	N	Sample	Attitude Measure	Form of ATDP	Statistic
Eisler, 1964	88	Coll. stud.	Attitude Toward Old People Scale	O	r= +.21*
Human Resources, 1962	38	Coll. stud.	" " "	A	r= +.02 N.S.
	50	" "	" " "	B	r= +.27 N.S.
McCourt, 1963	360	Geriatric & Non-Geriatric Hosp. Staff (Professional and Non-professional)	Staff Geriatric Attitude Scale (S-G-A)	O	9 r's* range +.33 to+.68
	120	" "	" " "	O	3 r's N.S. range +.27 to +.28

DISABLED Ss

Human Resources, 1964	124	Primarily[a] Dis. empl.	Attitude Toward Old People Scale	O	r= +.26**
	121	" "	" " "	A	r= +.27**
	123	" "	" " "	B	r= +.44**

[a]This sample contained 1/5 to 1/6 non-disabled Ss

*p <.05, **p <.01, ***p <.001, N.S. - not significant

Table 33

Differences in ATDP Scores for Stimulus Concepts of "Mentally Ill", "Nervous Breakdown" and "Alcoholic"[a]

Study	N	Sample	Attitude Measure	Form of ATDP	Statistic
Bates, 1964	89	Non-dis.	ATDP Form O Modified - "Nervous Breakdown"	O "Disabled"	t used, values N.A.; rep. N.S.
	42	Dis.	ATDP Form O Modified - "Nervous Breakdown"	O "Disabled"	t used, values N.A.; rep. N.S.
Freed, 1964	303	Stud. (Non-dis)	ATDP Form O Modified - "Mentally Ill"	O "Disabled"	t = 7.18 *; "Disabled" high
	303	Stud. (Non-dis)	ATDP Form O Modified "Alcoholic"	O "Disabled"	t = 5.34 *; "Disabled" high
	521	Hosp. Empl. (Non-dis)	ATDP Form O Modified - "Mentally Ill"	O "Disabled"	t = 9.88 *; "Disabled" high
	521	Hosp. Empl. (Non-dis)	ATDP Form O Modified - "Alcoholic"	O "Disabled"	t = 7.23 *; "Disabled" high

[a]The ATDP-O was modified in each case by substituting the terms, "mentally ill", "nervous breakdown", or "alcoholic", for the terms, "disabled" and "physically disabled", in the original. Thus, three different scales were developed.

* $p < .001$, N.S. - not significant, N.A. - not available, rep. - author reports

Table 34

Factor Analysis of Concepts of Disabilities[a]

Variables	Rotated Factor Loadings 1- Organic	2- Functional	Communalities h^2
Alcoholic	-0.01	0.86	0.90
Brain tumor	0.87	0.39	0.95
Broken leg	0.89	-0.07	0.97
Character disorder	0.11	0.92	0.91
Congenital blindness	0.90	0.31	0.97
Leprosy	0.97	0.06	0.97
Lung cancer	0.97	0.14	0.98
Malaria	0.90	0.31	0.97
Nervous breakdown	0.62	0.70	0.94
Neurosis, male	0.17	0.89	0.92
Neurosis, female	0.39	0.78	0.95
Psychosis, male	-0.09	0.92	0.93
Psychosis, female	0.11	0.86	0.92
Stomach ulcer	0.66	0.52	0.91
Syphilitic blindness	0.36	0.36	0.69
Terminal cancer	0.93	0.19	0.92
Traumatic blindness	0.77	-0.08	0.97
Tuberculosis	0.95	0.14	0.97
Average Man	0.21	0.12	0.65
Average Woman	0.43	0.32	0.72

[a]From Barker, 1964, p. 373.

Table 35

Correlation of Attitudes Toward the Disabled with Attitudes Toward Other Minority Groups; Non-disabled Ss

Study	N	Sample	Attitude Measures: Toward Disabled	Attitude Measures: Toward Minority Groups	Statistic
Chesler, 1965	320	Coll. stud. & H.S. stud.	ATDP-O	Intergroup Relations Scale (IRS) - Full Scale	r=-.52**
	320	" "	"	IRS Subscale - Race	r=-.45**
	320	" "	"	IRS Subscale - Religion	r=.40**
	320	" "	"	IRS Subscale - Nationality	r=-.43**
	320	" "	"	IRS Subscale - Social Class	r=-.46**
Cowen, Underberg & Verrillo, 1958	101	Adult Education stud.	Attitude to Blindness Scale	California Anti-Minority Scale	r=+.36**
	101	" "	" "	California Anti-Negro Scale	r=+.45**
Lukoff & Whiteman, 1963		N.A.	Attitude to Blindness Subscale:		
		"	Emotional Traits	Ethnic Tolerance	r N.A.; rep. pos. & sig.
		"	Independence	" "	" "
		"	Interaction	" "	" "
		"	Pity-Sympathy	" "	r N.A.; rep. N.S.
		"	Evaluation of Blindness	" "	" "
		"	Non-Protectiveness	" "	" "
Szuhay, 1961	144	Children - Kindergarten thru 6th grade	Children's Picture Sociometric Attitude Scale (CPSAS)	CPSAS: Attitude Toward Negro Children	r=+.25*

*p <.05, **p <.01, N.S. - not significant, sig. - significant
N.A. - not available, rep. - author reports

Table 36

Correlation of Attitudes Toward the Disabled with the California F[a] Scale of Authoritarianism; Non-disabled Ss

Study	N	Sample	Attitude Measure	Statistic
Cowen, Underberg & Verrillo, 1958	101	Adult Ed. stud.	Attitude to Blindness Scale[b]	r=+.33**
Human Resources, 1959	30	Coll. stud.	ATDP-O	r=-.44*
	45	Coll. stud.	ATDP-O	r=+.02 N.S.
Human Resources, 1960	28	H.S. teachers	ATDP-O	r=+.13 N.S.
	41	Coll. stud.	ATDP-O	r=+.03 N.S.
	42	Coll. stud.	ATDP-O	r=+.05 N.S.
	24	Coll. stud.	ATDP-O	r=-.12 N.S.
Human Resources, 1962	84	Coll. stud.	ATDP-A	r=-.02 N.S.
	84	Coll. stud.	ATDP-B	r=-.12 N.S.
Lamers, 1965	116	Coll. stud.	ATDP-B	r=-.21*
Rickard, Triandis, & Patterson, 1963	18	Business & educational employers	Rating of Wheelchair Handicapped[b]	r=+.49*

[a]Modified in Cowen et al. and Rickard et al. studies - see text.
[b]In this measure, high score reflected rejection or negative attitudes toward the disabled.
*p <.05, **p <.01, N.S. - not significant

(Table continued on next page)

Table 36 (Continued)

Study	N	Sample	Attitude Measure	Statistic
Rickard, Triandis & Patterson, 1963	87	Business & educational employers	Rating of Wheelchair Handicapped[b]	r=+.11 N.S.
	87	" "	" " "	r=+.09 N.S.
	18	" "	Rating of Ex-Tubercular[b]	r=+.53*
	87	" "	" "	r=+.10 N.S.
	87	" "	" "	r=+.12 N.S.
	18	" "	Rating of Epilepsy[b]	r=+.49*
	87	" "	" "	r=+.13 N.S.
	87	" "	" "	r=+.02 N.S.
	18	" "	Rating of Deaf[b]	r=+.23 N.S.
	87	" "	" "	r=+.37**
	87	" "	" "	r=+.17 N.S.
Whiteman & Lukoff, 1960b	109	Adults	Attitude to Blindness scale: Positive Stereotype subscale	r N.A.; rep. pos. & sig.; when intelligence partialled out r rep. N.S.

[a]Modified in Cowen et al. and Rickard et al. studies - see text.
[b]In this measure, high score reflected rejection or negative attitudes toward the disabled.
*p <.05, **p <.01, N.S. - not significant, sig. - significant,
N.A. - not available, rep.- author reports, pos. - positive

Table 37

Relationship between Measure of Intellectualism - Pragmatism (I-P) and ATDP

Study	N	Sample	Form of ATDP	Statistic
		NON-DISABLED Ss		
Human Resources, 1962	40	Coll. stud.	O	r=+.12 N.S.
	84	Coll. stud.	A	r=+.14 N.S.
	40	Coll. stud.	B	r=+.09 N.S.
	84	Coll. stud.	B	r=+.21*
	28	Coll. stud.	B	r=+.46*
		DISABLED Ss		
Human Resources, 1964	113	Dis. wkrs.	O	r=+.14 N.S.
	112	Dis. wkrs.	A	r=+.25**
	112	Dis. wkrs.	B	r=+.23*

*$p < .05$, ** $p < .01$, N.S. - not significant

Table 38

Relationship between ATDP and Machiavellianism; Non-disabled Ss

Study	N	Sample	Form of ATDP	Statistic
Human Resources, 1959	30	Coll. stud.	O	r=-.21 N.S.
	45	Coll. stud.	O	r=-.31*
Human Resources, 1960	28	H.S. teachers	O	r=+.13 N.S.
	41	Coll. stud.	O	r=+.10 N.S.
	42	Coll. stud.	O	r=-.34*
	24	Coll. stud.	O	r=-.37*
Human Resources, 1962	84	Coll. stud.	A	r=-.05 N.S.
	84	Coll. stud.	B	r=-.06 N.S.

*p <.05, N.S. - not significant

Table 39

Relationship between Extent of Contact and Attitude Toward the Disabled

Study	N	Sample	Contact Measure	Attitude Measure	Statistic
Baskin and Herman, 1951	45	Non-dis. coll. stud.	2-point Contact Scale	Questionnaire on attitude toward Cerebral Palsy	t - value N.A.; rep. N.S.
Bateman, 1962	232	Non-dis. children	" "	Children's rating scale of blind children's capacity to perform	$x^2 = 22.15^{***}$; Contact group more pos. attitudes than no contact group. Attitudes become more pos. with number of blind children known; stat. N.A.; rep. sig.***
Chesler, 1965	320	Non-dis. coll. stud.	" "	ATDP-O	$t = 2.59^{**}$; Contact group higher ATDP scores than No Contact group.
Coggin, 1964	68	" "	4-point Contact Scale	"	$x^2 = .32$ N.S.
Cowen, Underberg & Verrillo, 1958	101	Non-dis. adults	2-point Contact Scale	Questionnaire measuring attitudes toward blindness	$t = .39$ N.S.
Fischbein, 1962	30	Non-dis. coll. stud. & clerical workers	4-point Contact Scale	ATDP-O	$r=-.35$ (approaches $p = .05$)
Human Resources, 1962	139	Non-dis. Adult females	2-point Contact Scale	ATDP-O	$t=.87$ N.S.
Lamers, 1965	116	Non-dis. coll. stud.	Degree of relationship with dis. persons	ATDP-B	Stat. N.A.; rep. pos. relationship

$p = <.05$, $^{**}p < .01$, $^{***}p < .001$, N.S. - not significant, N.A. - not available, sig. - significant rep. - author reports, pos. - positive

(Table continued on next page)

Table 39 (continued)

Study	N	Sample	Contact Measure	Attitude Measure	Statistic
Roeher, 1959			Contact Questionnaire:		
	129	Non-dis. Adults	Minimal contact	Likert scale of attitudes toward the disabled	t=5.42*** (between Min. and Max. groups with Max. high)
	114	" "	Median contact	" "	t=2.18* (between Min. and Med. groups with Med. high)
	66	" "	Maximal contact	" "	t=8.35*** (between Med. and Max. groups with Max. high)
Rusalem, 1950	130	Non-dis. graduate psych. stud.	2-point Contact Scale	Adjective checklist of traits of the deaf-blind, & an opinions about deaf-blindness rating scale	t value N.A.; rep. N.S.
Siller, 1964	235	Non-dis. Jr. H.S. stud.	3-point Contact Scale	ATDP-O	r= +.19**
	229	Non-dis. H.S. stud.	" "	ATDP-O	r= +.22**
Siller and Chipman, 1965	65	Non-dis. adults & Adoles.	3-point Amount of Contact Scale	ATDP-O	r= -.20 N.S.
	65	"	" "	General Acceptance Measure #1	r= -.11 N.S.
	65	"	" "	General Acceptance Measure #2	r= -.16 N.S.
	65	"	" "	Feeling Check List	r= -.15 N.S.
	65	"	" "	Social Distance Scale	r= -.28 N.S.
Szuhay, 1961	144	Non-dis. grammar sch. children	2-point Contact Scale	Children's Picture Sociometric Attitudes Scale	r= +.21 N.S.
Whiteman and Lukoff, 1962b	109	Non-dis. adults	Not Described	Attitudes to Blindness Scale: Emotional Attributes Subscale	Stat. & sig. N.A.; rep. contact sig. reduces stereotypes of blind as unhappy
Yuker, Block and Campbell, 1960	107	Non-dis. coll. stud.	Amount of Contact Scale	ATDP-O	x^2= 11.47**; high contact group higher ATDP scores than low contact group

*p <.05, **p <.01, ***p <.001, N.S. - not significant, sig. - significant
N.A. - not available, rep - author reports, pos. - positive, rel. - relationship

Table 40

Relationship between Types of Contact and Attitude Toward the Disabled, Non-disabled Ss

Study	N	Sample	Type of Contact	Attitude Measure	Statistic
Arnholter, 1963	30	Non-dis. staff and professionals of Goodwill Industries	Worked with dis.	ATDP-O	t values N.A.; rep. staff at Goodwill sig. higher ATDP scores than other 3 groups** (difference between other groups N.S.)
	62	Wkrs. in competitive industries	Worked with non-dis.	"	
	64	Staff in competitive industries	Worked with non-dis.	"	
	33	Professionals in other agencies	Worked with non-dis.	"	
Bell, 1962	40	Rehab. hosp. wkrs.	Rehabilitation of dis.	"	Rehab. vs. staff with close contact; t=4.71**; rehab. low
	30	General hospital staff	Had dis. family member or close friend	"	Rehab. vs. staff with limited contact; t=.22 N.S.
	40	General hospital staff	Limited social contact with disabled	"	Staff with close contact vs. staff with limited contact; t=3.78**; close contact high
Cohn, 1966	27	Coll. stud.	Attended class with dis. stud.	ATDP-A	χ^2=4.24*; class with dis. stud. showed sig. more pos. change than class with no dis. stud. using test-retest method (done at H.R.)
	35	" "	Attended class with no dis. stud.	"	

*$p < .05$, **$p < .01$, N.S. - not significant, sig. - significant
N.A. - not available, rep. - author reports, pos. - positive

(Table continued on next page)

Table 40 (continued)

Study	N	Sample	Type of Contact	Attitude Measure	Statistic
Felty, 1965	57	Rehab. & Spec. Educ. wkrs.	Rehab. & educ. of dis.	ATDP-O (modified by Guttman scaling)	$F=3.027^{*}$ (Duncan's Multiple Range) Rehab. vs. educators; $t=3.420$ N.S. Rehab. vs. low income jobs; $t=7.494^{*}$; rehab. high Rehab. vs. business & prof.; $t=8.422^{*}$; rehab. high
	113	Educators	No special contact with dis.	" "	
	49	Low income jobs, laborers, secretarial, etc.	" " " " "	" "	
	48	Business & Professionals	" " " " "	" "	
Fischbein, 1964	45	Coll. stud.	Had vs. did not have, for each of seven types of contact	ATDP-O	r_{bis} range from -.04 to +.26 N.S.
Genskow and Maglione, 1965	113	" "	Attended university with disabled student program	"	$t=3.64^{***}$ with program group high
	109	" "	Attended university with no disabled student program	"	
Granofsky, 1956	104	Women	Volunteer hospital work	Sentence Completion Test	$t=.804$ N.S.
	101	"	No contact with dis.	" "	
Human Resources, 1962	10	Nurses	Tour of Abilities plant	ATDP-A	$t=2.13^{*}$; tour nurses high
	13	"	No tour of Abilities	"	
Knittel, 1963	18	H.S. stud.	Had dis. sibling	ATDP-O	Data N.A.; Ss with dis. sibling scored lower
	18	H.S. stud.	Had no dis. sibling	"	
Moosbruker & Giddon	94	Dental stud.	Clinical experience with dis.	ATDP-A	$t=1.52$ N.S.
	91	" "	No experience with dis.	"	
Webb, 1963	46	Coll. stud.	Reported contact as: Strangers	ATDP-O	Strangers vs. casual acquaintance; $t=1.08$ N.S.
	79	" "	Casual acquaintances	"	Roommates vs. casual acquaintance; $t=3.03^{***}$; roommates high
	56	" "	Roommates	"	Roommates vs. strangers; strangers; $t=4.07^{***}$; roommates high
Yuker, Block & Campbell, 1960	170	" "	Pre-and post-test measures after class with disabled	"	$x^2=11.47^{**}$

$^{*}p<.05$, $^{**}p<.01$, $^{***}p<.005$, N.S. - not significant, sig. - significant
N.A. - not available, rep. - author reports, pos. - positive

Table 41

Specific Educational Experience and Attitude Toward the Disabled; Non-disabled Ss

Study	N	Sample	Educational Experience	Attitude Measure	Statistic
Auvenshine, 1962	103	Male coll. stud.	Education majors	Attitudes Toward Severely Dis. Coll. Stud. Scale	
	35	" " "	Arts & science majors	" " "	$F = 5.10^{**}$; educ. majors most pos.
	11	" " "	Agriculture majors	" " "	
	6	" " "	Engineering majors	" " "	
	125	Female coll. stud.	Education majors	" " "	
	18	" " "	Arts & science majors	" " "	$F = 3.21^{*}$; educ. & arts & science majors more pos. than home ec. majors
	6	" " "	Home economics majors	" " "	
Felty, 1965	57	Costa Rican adults	Rehab. & special education workers	ATDP-O (modified by Guttman scaling)	$F = 3.027^{*}$ (Duncan's Multiple Range) Rehab. vs. educators; $t=3.420$ N.S. Rehab. vs. low income jobs; $t=7.494^{*}$; rehab. high Rehab. vs. business & prof.; $t=8.422^{*}$; rehab. high
	113	" " "	Educators	" " "	
	49	" " "	Low Income -- labor & secretarial	" " "	
	48	" " "	Business & Professionals	" " "	
Fishbein, 1964	21	Coll. stud.	Education majors	ATDP-O	$r_{bis}=.78^{**}$ (between ATDP & major) $t = .42$ N.S. (done at Human Resources)
	23	" "	Other majors	"	
Maglione, 1965	13	Graduate rehab. stud.	Rehab. counseling program	"	$t = 2.39^{**}$; Rehab. stud.higher
	49	Undergraduate stud.	No rehab. courses	"	

$^{**}p < .01$, N.S. - not significant, pos - positive

(Table continued on next page)

Table 41 (continued)

Study	N	Sample	Educational Experience	Attitude Measure	Statistic
McCourt, 1963	240	Various groups of professional hosp. personnel in geriatric & non-geriatric hosp.	Professional training	Modified ATDP-O, 4-pt. response scale (19 items)	F = 21.32**; Professional groups higher
	240	Various groups of non-professional personnel in geriatric & non-geriatric hosp.	No professional training	" " "	
Meyer, 1963	29	Student nurses	Participated in group counseling session	Pre- & post-counseling ATDP-O	F = 9.81** (Anal. of Covariance); post-counseling higher
	29	" "	Did not partake in group counseling	" " "	F = 3.58 N.S. (Anal. of Covariance)
Papcum, 1962	35	" "	Rehab. course	Pre- & post-course ATDP-O	t = 1.54 N.S.; post-course higher (t done at Human Resources)
Tutaj, 1964	30	H.S. stud.	Membership in Junior Red Cross	ATDP-O	x^2 = .30 N.S.
Warren, Turner & Brody, 1965	80	Coll. stud.	Psychology-Education-Sociology program consisting of lectures, discussion, and institutional tours.	Attitude toward exceptional children scale	Preference for brain-injured sig. decreased & preference for visually handicapped sig. increased after program; x^2 N.A.; rep. both sig.**

**$p < .01$, N.S. - not significant, N.S. - not significant, sig. - significant, N.A. - not available, rep. - author reports

(Table continued on next page)

Table 41 (continued)

Study	N	Sample	Educational Experience	Attitude Measure	Statistic
Whiteman & Lukoff, 1962b	2132	H.S. Stud.	Exposure to communication regarding 5 attitudinal components of blindness:	Attitudes to Blindness Scale	
			Personal evaluation of blindness	" "	N.A.; rep. N.S.
			Positive stereotype of blind	" "	N.A.; rep. N.S.
			Emotional traits of the blind	" "	N.A.; rep. N.S.
			Interaction with the blind	" "	N.A.; rep. N.S.
			Pity-Sympathy toward the blind	" "	N.A.; rep. sig.
Wilson, 1963	145	Nurses	Nurses Training	ATDP-O	Nurses vs. oil field wkrs; t = 2.59*; nurses higher
	52	Oil field wkrs.	No specific training	"	
	56	Foremen & supervisors	" "	"	Nurses vs. other occupations; t values ranged from .31 to 1.39 N.S.
	36	Personnel wkrs.	" "	"	
	67	Indust. Psych. stud.	" "	"	
	104	Psychometrics stud.	" "	"	

*$p < .05$, **$p < .01$, N.S. - not significant, sig. - significant, N.A. - not available, rep. - author reports

Table 41 (continued)

Study	N	Sample	Educational Experience	Attitude Measure	Statistic
Wyrick, 1964	25	Undecided major, coll. stud.	Course in Somato-Psychology	Pre- & post-course ATDP-O	t's done between pre- and post-course ATDP scores: t= 2.90**; post-course higher
	6	Graduate coll. stud.	" "	" " "	t= .69 N.S.
	19	Physical Therapist major, coll. stud.	" "	" " "	t= 2.26*; post-course higher
	16	Occupational Therapist major, coll. stud.	" "	" " "	t= 1.19 N.S.
	15	Occupational Therapist major, coll. stud.	No course in Somato Psychology	" " "	t= .61 N.S.
	11	Gen. Psych. coll. stud.	No course in Somato Psychology	" " "	t= 1.17 N.S.

*p < .05, **p < .01, N.S. - not significant, sig. - significant

Table 42

Tests of Difference Studies between Work Performance and Attitude Toward the Disabled; Disabled Ss

Study	N	Sample	Measures of Work Performance	Attitude Measure	Statistic
Wada, 1964	N.A.	Dis. wkrs. in industrial workshop	Supervisory rating as Employable or Non-Employable	ATDP-B	$t = 1.80$* (one-tailed test); employable group high
Yuker, Block & Campbell, 1960	213	Dis. Abil. empl.	Supervisory rating of Quality of production	"	$x^2 = 4.68$*; high ATDP scorers rated higher
	213	" "	Supervisory rating of Quantity of production	"	$x^2 = 4.18$*; high ATDP scorers rated higher
	180	" "	Number of Absences	"	$x^2 = 4.32$*; high ATDP scorers had less absences
	179	" "	Number of Latenesses	"	$x^2 = 1.39$ N.S. No diff. between high and low scorers

*$p < .05$, N.S. - not significant

Table 43

Correlational Studies between Work Performance and Attitude Toward the Disabled

Study	N	Sample	Measures of Work Performance		Attitude Measure	Statistic
Block, 1962	81	Dis. Abil. empl.	Supervisor Rankings of Quality of Job Performance		ATDP-O	r = +.12 N.S.
	81	" " "	Supervisor Rankings of Quantity of Job Performance		"	r = +.12 N.S.
Human Resources, 1964	165	" " "	Merit rating Forms	Total Productivity Score	"	r = +.04 N.S.
	165	" " "	"	Quantity score	"	r = +.09 N.S.
	165	" " "	"	Quality score	"	r = +.01 N.S.
	159	" " "	"	Total Productivity score	ATDP-A	r = +.04 N.S.
	159	" " "	"	Quantity score	"	r = .00 N.S.
	159	" " "	"	Quality score	"	r = +.02 N.S.
	135	" " "	"	Total Productivity score	ATDP-B	r = +.03 N.S.
	135	" " "	"	Quantity score	"	r = +.02 N.S.
	135	" " "	"	Quality score	"	r = +.10 N.S.
	168	" " "	Supervisor Ratings from average to outstanding on a 9-point scale		ATDP-O	r = -.10 N.S.
	162	" " "	"	" "	ATDP-A	r = -.08 N.S.
	120	" " "	"	" "	ATDP-B	r = -.05 N.S.

N.S. - not significant

(Table continued on next page)

Table 43 (continued)

Study	N	Sample	Measures of Work Performance	Attitude Measure	Statistic
Human Resources, 1964	138	Dis. Abil. Empl.	Supervisor Rankings of Quality of Work	ATDP-O	r = +.12 N.S.
	136	" " "	" " "	"	r = +.09 N.S.
	129	" " "	" " "	"	r = +.05 N.S.
	138	" " "	Supervisor Rankings of Quantity of Work	"	r = +.15 N.S.
	136	" " "	" " "	"	r = +.09 N.S.
	129	" " "	" " "	"	r = .12 N.S.
	247	" " "	Number of Excused Absences	ATDP-O	r = -.01 N.S.
	238	" " "	" " " "	ATDP-A	r = +.08 N.S.
	164	" " "	" " " "	ATDP-B	r = +.04 N.S.
	247	" " "	Number of Non-excused Absences	ATDP-O	r = +.02 N.S.
	238	" " "	" " " "	ATDP-A	r = +.04 N.S.
	164	" " "	" " " "	ATDP-B	r = -.09 N.S.
	247	" " "	Number of Times Late	ATDP-O	r = +.03 N.S.
	238	" " "	" " " "	ATDP-A	r = +.11 N.S.
	164	" " "	" " " "	ATDP-B	r = +.02 N.S.

N.S. - not significant

Table 44

Relationship between Job Satisfaction and Attitude Toward the Disabled

Study	N	Sample	Measure of Job Satisfaction	Attitude Measure	Statistic
			DISABLED Ss		
Block, 1962	81	Dis. Abil. empl.	Science Research Associates Employee Inventory: S.R.A. Total Score	ATDP-O	r= +.29**
	81	" "	S.R.A. Satisfiers	"	r= +.28*
	81	" "	S.R.A. Dissatisfiers	"	r= +.25*
Human Resources, 1964	241	" "	Job Satisfaction Scale (Block & Yuker 1964a)	"	r= +.10 N.S.
	236	" "	" "	ATDP-A	r= +.17**
	156	" "	" "	ATDP-B	r= +.25**
	241	" "	" "	ATDP-O	r= +.10 N.S.
	236	" "	" "	ATDP-A	r= +.17**
	156	" "	" "	ATDP-B	r= +.10 N.S.
			NON-DISABLED Ss		
Human Resources, 1962	65	Non-dis. coll. stud.	Job Satisfaction Likert Scale	ATDP-O	r= +.21 N.S.
	34	" "	" "	ATDP-A	r= +.17 N.S.
	31	" "	" "	ATDP-B	r= +.46**

*p< .05, **p <.01, N.S. - not significant

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Appendix D

STUDIES RECEIVED AFTER THE MONOGRAPH WAS COMPLETED

Avedon, E. M. Personal communication, 1965.

Brewster, G. W. Attitude change as a function of cognitive dissonance due to attitude ambivalence, field independence, resolving ambivalence, and discrepant compliance. Unpublished doctoral dissertation, University of Florida, 1965.

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Wilson, J. C. Personal communication, 1965.

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